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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 la jardinomanie à vos enfans.”—*Prince de Ligne.*

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AUTHOR OF THE “FRUITS OF AMERICA.”

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THE MAGAZINE OF HORTICULTURE.

THE PROGRESS OF HORTICULTURE.

ANOTHER year has passed away, and we enter upon a new volume with more cheerful heart, and higher hopes of a better appreciation of horticultural intelligence throughout the entire Union. The year opened with the continuance of the dread rebellion, but it has closed upon a free nation, within whose boundaries every man can claim the reward of his labor.

With such grand results what should now hinder our onward movement to greatness? Despoiled, as so much of our country has been by four years of war, its fields and pastures are still ready to yield the rich harvest of the husbandman's labor, and that labor, now that it belongs to none other than he who performs it, will be more zealously devoted to the improvement of the soil, and with intelligent industry will spring up a taste for trees and plants, which will make many of the heretofore waste places "blossom like the rose." New houses will be erected, new gardens made, and plantations of trees, both for ornament and profit, will give a new aspect to all portions of the country.

This influence has already been manifested in the past year. With returning prosperity, and the anticipation of a great and glorious future, gentlemen of wealth and taste are giving their attention to the improvement of their gardens and grounds. New and beautiful residences in the neighborhood of our large cities are being erected, with all the accessories of greenhouses and graperies, the best evidence of a more refined taste, and the highest enjoyment of accumulated wealth. Men build finely before they garden well, was the remark of Lord Bacon. The greater adornment of our grounds, and the better cultivation of our gardens is now as

great an aim as the erection of magnificent villas. Horticulture has thus enlarged the sphere of our improvement, and increased the means of our enjoyment.

We give a brief summary of the season:—

The month of January was cold throughout; on the 3d, the temperature was 2° below zero, with snow on the 4th, and rain on the 6th, which changed to a high windy snow storm and sudden fall of the thermometer to zero on the 8th. It was then milder with snow until the 17th, when another cold week succeeded, with the temperature at zero on the 19th. After a cold rain on the 22d, the last week was clear and cold, with the temperature from 2° to 10°.

February commenced with milder weather, with rain and a light snow on the 4th, and another rain on the 8th. This was followed by a cold week, with the temperature at 3° on the 13th. Thaw, with a heavy rain storm on the 16th, carried off most of the snow, and the last week was mild for the season.

March was warmer than usual; on the 4th, there was a warm rain, with the temperature at 45°, and another rain on the 9th. After a few cooler days, it was warm again on the 16th, with the temperature at 65°, and this mild weather continued to the 22d. The last week the temperature was 32° for six successive mornings.

The first week in April was a repetition of the preceding week, the temperature being 32° for six successive days. It was then showery and warmer, and rainy on the 10th. The weather was then cooler, with sharp frost on the 25th. The first real warm day was on the 27th, when the temperature reached 80°, and 85° on the 28th. This warmth opened pear, cherry and plum blossoms at this unusually early date.

May opened cloudy, showery and cool. The 7th was warm, and a heavy rain on the 9th and 13th was followed with fine weather, and a very warm day on the 17th, the temperature reaching 90°, with a thunder shower. It was then cloudy and rainy until the 25th, when it was cool again; but the month closed warm and fine, with the very high temperature of 92° on the 28th, which accelerated vegetation with great rapidity.

June continued warm and fine, with the temperature at 92° on the 4th. A week of seasonable weather succeeded, with light and genial showers up to the 17th, when another warm day was experienced, with the temperature at 94° , one of the warmest days of the season. It was then very fine and warm, with one or two very light showers, and the temperature at 95° on the 30th.

The month of July commenced a little cooler, with a fine rain on the 2d, which was greatly needed. The 4th it was fine again, and another warm day. This fine weather continued up to the 12th, when it became quite cool, with the temperature from 45° to 55° for two or three successive mornings. The 18th was warm again, and the weather continued very uniform to the end of the month.

August continued unusually warm, with the temperature at 85° ; the 2d, 92° ; 3d, 98° ; and 4th, 101° , which was the hottest day but one or two for twenty-five years. On the 5th, there was a light shower, but hardly sufficient to revive vegetation, which was suffering from long continued drought. The succeeding week was warm, with very cool nights, 50° to 60° in the morning, and 80 to 85 at noon. The remainder of the month was cool and dry, with the temperature at 48° on the morning of the 25th.

The first of September was the last of the warm days of the summer, the temperature reaching 95° . It continued fine without rain, but with cool mornings, up to the 14th, when it was warm again, with the temperature at 86° . The 17th was cooler, and the 20th very cool, nearly a frost. On the 27th, the temperature was 38° . The month was fine throughout, without rain.

October opened warm, but on the 3d, a sudden change brought the temperature as low as 34° , with a white frost in all cool localities. This occurred again on the 6th, after which it was warmer until the 14th, when the mercury fell to 28° , with a frost which killed all tender vegetation. The first heavy rain since June followed on the 15th, after which it was pleasant and cool, with occasional frosts to the close of the month.

The month of November commenced rather mild, with an

easterly rain, but soon cooled down to a temperature of 20° on the 8th, and a succession of cool days followed to the 13th, when it was unusually fine and warm for some days, the temperature reaching the unusual height of 70° on the 16th and 17th. More rain fell on the 21st, and the last ten days were unusually fine for the season, with only a few light frosts, a light sprinkling of snow, and warm showers.

December began with a continuation of the same favorable weather. On the 3d, the temperature was 44° . On the 6th, it was cooler, and the first snow of any consequence was on the 7th, when about two inches fell, with some rain. The 8th and 9th were cool again, with the temperature at 4° , and winter appeared to have set in; but on the 12th, the snow disappeared and the weather was very beautiful. A change on the 15th brought the temperature down to 7° , but as we now write, (20th,) it is milder, and pleasant for the season.

Comparing this summary of the season with the last and previous years, we find that the winter of 1864-5 was above the average for temperature, with no extremes of cold, the lowest being 2° below zero; the uniformity of temperature was very remarkable. Though but very little snow fell,—at no time we think exceeding four inches,—yet the ground was well covered from December 8th till spring. The month of March, usually accompanied with keen cutting winds, and sometimes a very low temperature, was mild and favorable. There were fewer extremes of temperature than often occur during our winters.

The general characteristics of the year might be classed as a mild winter, a warm and favorable spring, a dry and hot summer, and a mild autumn—somewhat similar to that of 1864; indeed, it is rare to find two seasons so much alike to follow in succession. The summer was as dry as that of 1864, but the drought commenced earlier that year than in 1865, and owing probably to the liberal rains of April and May, vegetation suffered less the last year than in 1864.

Crops generally were very good, though not over-abundant. Apples appeared to be a general failure in New England, although a good crop in New York. Pears were rather above the average, though they suffered in many places from

drought. Peaches were plentiful and good. Grapes were poorer than usual, rotting badly in many localities, and mildewing more or less. As a whole, the grape crop has not been satisfactory. Strawberries were good, and the crop was all gathered before the vines began to suffer much. In some places the ground was exceedingly dry; but where there has been a good fair soil, trees have made a good growth, and now promise good results next year.

HORTICULTURE.

The grape, which has attracted so much attention within a few years, failed to give the satisfaction of the previous year; this, however, should not lessen the interest in so important a fruit, which is destined to take an important rank among our hardy fruit, second perhaps to no other. Already our markets are stocked with Isabella and Catawba grapes, up to the very period we now write, and when many of the newer kinds are as well known and generally cultivated, they will either take their place, or be found in addition to those we have already named. For vineyard purposes, however, the grape is to become prominent. Experiments have been tried, showing the excellent quality of wine made from the Delaware, Concord, and other grapes, and the fact is now well established, that either one or all of these sorts, which suit a given locality, will prove a profitable variety for vineyard culture. What will do in Massachusetts may not do in Missouri, and vice versa. But if the grape is not yet found which will answer every purpose it will soon be forthcoming. The demand has gone out, and a few years will show how well it has been supplied. Among the newer grapes the Adirondac, Iona and Israella hold a high rank. They are sufficiently early for New England, and must become popular sorts. Many new seedlings we hear of, and some have been described in our last volume, which promise well. Another year will better enable us to place them in their proper rank. Rogers's grapes, some of which possess more or less merit, do not appear to have given very general satisfaction. Some cultivators think three or four of them are valuable, while others condemn them all. We have already

given our opinion of them. No. 4 was certainly better the past year than we have ever seen it before. Nos. 41 and 43 are similar, and some think better, while we believe Mr. Rogers thinks his No. 15 the best of all. No. 3 is an early and pretty red grape; a little more experience will establish their real value as table grapes; for wine they have not been tried to any extent, but we should think they might prove valuable. We have endeavored to give all the reliable grape information in our last volume, and shall continue to do so the present year.

The pear has attracted more attention the past year; and though, on the whole, not a very favorable season, still many fine specimens have been exhibited, and some of the newer pears have established their reputation as remarkable kinds; such is the Doyenné du Comice, which has all the valuable qualities of the Beurré d'Anjou, and a much richer pear. Dana's Hovey has this year exceeded the expectations of cultivators. Heretofore it has only been ranked among the smaller pears; but the past year has shown that it belongs among the medium size, and is fully or quite up to the Winter Nelis. Many new seedlings have been introduced, and some of them appear to have valuable qualities. We shall notice them more fully in the present volume.

The pruning and training of the pear has been well illustrated by Capt. Austin, in his valuable article (Vol. XXXI., p. 51) describing his wineglass pattern. Whether it shall be adopted by cultivators in preference to the pyramid will depend upon the care and attention that can be given to it; that it is admirable under Capt. Austin's management there is no doubt, but whether better results can be obtained than by the pyramid, remains to be decided.

After many years of patient trial of all the various sorts of strawberries which have been from time to time introduced, none seem to come up to the requisite standard, and although all possess more or less merit, they fail in the combination of excellences. The Agriculturist will, the present year, probably obtain its true rank; it has only so far fruited in few collections, but the coming summer will test it far and wide. We have already stated that we are highly impressed in its

favor, and if its productiveness, hardiness, &c., are equal to its quality as a berry, it will be the best variety introduced for twenty years. Of all the foreign kinds which have been introduced *La Constante* still takes the lead.

Orchard-house culture does not appear to have been so generally attractive as in previous years; whether this arises from the want of success, or from the labor attending this mode of culture we do not know. But, as a mode of obtaining a certain crop of beautiful fruit, particularly of the peach, it is deserving the attention of every lover of a complete garden. A well-constructed and well-proportioned orchard-house is one of the most pleasant appendages of a country villa, and may be made a delightful promenade at the season of the year when, in our climate, there is little enjoyment in out-door exercise.

At the Annual Exhibition of the Massachusetts Horticultural Society, some very beautiful pineapples were exhibited, from the garden of Gov. Sprague of Providence. We were pleased to see this evidence of a due appreciation of the choicest fruits. We see no reason why the pineapple should not be cultivated as well as the grape. It is true we occasionally find them in our market, abundant and cheap, at some seasons of the year, but these are no more to be compared to the cultivated fruit than the wild grape can be compared with those grown under glass. Few fruits, indeed, show so much difference as the pineapple, in the condition as we find them in our markets, and properly cultivated and ripened by artificial means. We thank Gov. Sprague for this evidence of an appreciation of superior fruit, and hope gentlemen of wealth will follow his example, in adding the pine to their list of cultivated fruits.

For the description of many varieties of fruits, as well as detailed information upon their culture, mode of pruning, &c., we must refer to our last and previous volumes.

FLORICULTURE.

The taste for fine foliage, as well as beautiful flowers, is rapidly extending, and that class of plants, exhibiting the former quality, are becoming, yearly, more prominent objects in our gardens. The *Coleus Verschaffeltii*, with its rich

crimson and bronze leaves has aided materially in developing this taste, which now seeks gratification in more variety, and the Cannas, Calocasias, Caladiums, and similar large and broad-foiled plants, are planted more extensively, and grouped with fine effect. Few, who have not had the opportunity to see these under the best conditions of treatment are aware of their grand appearance. The French, who have introduced it into their public gardens, have made it a specialty, and have added many new things, which increased the variety, and add immensely to the picturesque effect. Among the more prominent plants are the Wigandia, Aralia, Nicotiana, and many others, and the India Rubber Tree, and even the Banana, a tropical plant, are found to flourish well in the summer season, and form splendid groups of superb foliage. We shall endeavor to give our readers some account of all the plants useful for this purpose, and aid, as far as possible, in disseminating a taste for all fine-foiled plants which may be grown in the open ground in our warm climate.

The Gladiolus and the Lily maintain their just claim to a prominent rank among our popular and showy flowers. The Gladiolus is an indispensable addition to every garden, and we can scarcely imagine how they could have been interesting without it, particularly in July and August. In fact, if we look back, we shall find that before the introduction of the Japan Lilies and the improved Gladiolus, our main resource was in annual and perennial flowers, which, though beautiful as they are, could not possibly produce the gorgeous display of a group of Gladiolus, of the exquisite masses of coloring of the Japan Lilies, now enlarged and varied by the addition of the *Lilium auratum*, or Golden Banded Lily of Japan, which is destined to form in itself a superb group, augmented by its rich and powerful fragrance. Other new lilies have been introduced, and these and their hybrids, for many of them are susceptible of hybridization, will give a new feature to our gardens. If to these we add the Zinnia, now brought to the perfection of a florist's flower, and of almost any color, how much have our gardens now to render them doubly ornamental and attractive.

The offer of liberal prizes for the Rhododendron and Azalea,

by the Massachusetts Horticultural Society, together with the increasing culture of these flowers, is bringing them much more rapidly before the public, and their magnificence is now generally acknowledged. There yet prevails an idea that they are somewhat difficult to cultivate, and require a particular kind of soil, but we have endeavored to show, by the evidence of many successful cultivators, that this is an error. They will not bear the neglect of some kinds of plants, but that they will thrive and grow in any good sandy soil, is now proved beyond dispute. Peat, when it is to be easily had, may be used to advantage, but when it cannot be got, Rhododendrons, Azaleas, and the whole tribe of the so-called American plants, may be grown in a rich, light, sandy soil. Mr. Hunnewell, we are glad to learn, is extending his culture of these plants, and during his late tour abroad selected and sent home many new kinds, which will be tried at Wellesley, and we shall soon have the names of such as are hardy there, which may then be added to our collections. This is the kind of trial we need, for under the process of hybridization, the constitutional habits vary so much that only a thorough test will decide the question of their hardiness in our severe climate. After a few years we shall have seedlings which will equal if not surpass the foreign varieties.

Probably there is no climate more favorable to the rose than that of Virginia, where the Tea, Noisette, and all other roses that we consider tender in our climate, are quite hardy. And now that the restrictions, which have prevented energetic and intelligent cultivators from emigrating to that state are forever removed, there is no reason why the production of seedling roses would not richly repay any who may make the attempt to grow them. The Noisette is an American rose, and takes its name from the production of the original variety, by M. Noisette of South Carolina, some thirty or more years ago. Since then what vigor and beauty has been infused into the Tea and other roses, through the Noisettes! They are no longer the feeble things of former days, but have the vigor of a Prairie, and almost their hardiness. Indeed, it will not be too much to expect to have a real tea rose hardy enough to stand with slight protection our severe winters. The Gloire

de Dijon and Celine Forester do this in favorable localities, and we should think from the appearance the Marechal Niel is of the same habit. At any rate if the war has left one good loyal cultivator in Virginia, who loves flowers, we advise him to turn his attention to the production of Tea and Hybrid Perpetual Roses, assured he will reap a rich harvest.

The new plants of the year, as indeed of the last four years, have been few. Among those of more than ordinary interest are the *Dielytra alba*, already noticed; the Japanese Saxifrage, (*S. Fortunei*, var. *tricolor*) an exquisite golden and pink variegated-leaved variety, of the habit of *S. sarmentosa*, which will form one of the most beautiful objects for hanging baskets or vases. *Lychnis Senno*, another Japan acquisition, with large showy flowers, nearly or quite hardy. The Perpetual Carnation, one of our most showy winter-flowering plants, has been made a specialty by some of the New York cultivators, and new varieties, surpassing any that have been imported, have been raised and introduced to our collections. *Iresine*, or *Achyranthes Herbsteri*, a new plant, with deep rich foliage, resembling the *Coleus*, but said by many English cultivators to surpass it as an effective bedding plant, will add another of those beautiful objects, whose superb foliage forms so pleasing a feature in our flower gardens. For other varieties we must refer to our volume for 1865.

ARBORICULTURE.

Tree planting is once more occupying the attention of gentlemen throughout the country. During the greater part of the last four years the rebellion has been the absorbing subject, and few could devote but little time to anything but the means to reclaim and restore our entire Union. But with returning peace, and the consequent prosperity, planting has been resumed with increased zeal, and there is renewed inquiry for many of our most beautiful ornamental trees. A better taste is being developed, and a desire to possess something more than the common shrubs which are found in every collection.

The accessions, in the mean time, to this department of gardening have been larger than usual. The rich treasures

of Japan have been sent to England and to our own country, thanks to the exertions of Dr. Hall and others, and many of the trees and shrubs have fortunately proved hardy enough for our northern climate, while all will probably succeed south of Washington. These include some of the rich foliaged maples, of which we have already given some account, and a large number of coniferous trees. When these shall have attained some size, they will better show how much we are indebted to the Japanese for these invaluable acquisitions.

HORTICULTURAL LITERATURE.

There has been a much better demand for horticultural works, and some new volumes have appeared during the last year. Among these are WOODWARD'S GRAPERIES AND HORTICULTURAL BUILDINGS, an excellent volume, giving a variety of information in regard to the constructing, warming, &c., of such structures; also, WOODWARD'S COUNTRY HOMES, a work which may be read to advantage by all who are about building in the country. BURR'S FIELD AND GARDEN VEGETABLES OF AMERICA has passed to a second edition, revised and improved. The TRANSACTIONS OF THE NEW YORK STATE AGRICULTURAL SOCIETY FOR 1864, is another of the useful and valuable publications, under the superintendence of Col. Johnson. The AGRICULTURE OF MASSACHUSETTS, by C. L. Flint, Secretary, is also a work of much interest. The DEPARTMENT OF AGRICULTURE is the title of the volume issued by the United States Commissioner of Agriculture. It is decidedly an improvement over some previous years, though not what it should be. The Agricultural and Horticultural publications show renewed exertions to maintain the standing they have already obtained.

OBITUARY.

It is with regret that we have to record the loss of so many eminent botanists and horticulturists. SIR JOSEPH PAXTON, SIR W. J. HOOKER, and PROF. LINDLEY, each at the head of their respective professions, have passed away. It will be difficult to supply the places which these distinguished men filled. The loss of JOSEPH FROST, the well-known nurseryman of Rochester, is deeply deplored by all who had the pleasure of his acquaintance.

KEEPING LATE PEARS.

BY AN EAST PENNSYLVANIA FRUIT GROWER.

I was much impressed with the soundness of the opinion expressed by the editor of this Magazine, a few months ago, that since the introduction of various new varieties of winter pears, which possess good keeping qualities, artificial methods of keeping the most perishable varieties were less needed. As to the plans practised by Mr. Nyce, I am by no means convinced that they are well adapted to the keeping and proper ripening of late pears. It may be a question whether late pears, kept for months at so low a temperature as 38° , will ever ripen satisfactorily. Then, again, the degree of dryness which Mr. Nyce seeks to obtain, I think is not adapted to keep pears plump and sound. Indeed, I am inclined to think that the temperature of an ordinary fruit-room, or fruit-cellar, with a fair degree of moisture, is better suited to late pears than the temperature of an ice-house. Certainly, in thirty days after gathering late pears, we can get a temperature as low as we desire in the fruit-room, even here at Philadelphia, without the use of ice.

There appears to be a systematic puffing of the patent house invented by Mr. Nyce, and enormous sums are asked for the use of the patent in large cities. It may be well to inquire, whether, in the case of pears, at least, we need any such appliances, and whether such aids as we do need are covered by the patent.

My own idea is, that the best late pears not only do not need to be kept very cold by means of ice, but that they would be greatly injured by such a temperature. Neither do they need to be kept very dry. Picked early from the tree, and kept in a moderately cool place, say at 55° or 60° , the best late pears, in my experience, seem to go on slowly developing their best qualities for months, gradually approaching a condition of perfect ripeness and excellence.

Now a temperature of 55° or 60° can always be got, without ice, in a deep cellar or vault, in any month in the year, this being the general temperature of the earth ten to twenty

feet, or more, below the surface. After the first of November, of course, a lower temperature can be obtained from the outer atmosphere. Pears properly packed in boxes, bins or barrels would be little affected by ventilating the fruit cellar, on dry days, to remove excess of moisture, and hence artificial dryers are not needed.

The chief point appears to be the cultivation of varieties which will keep well without the aid of costly artificial means. So far as profit is concerned, it is not very desirable to keep pears later than February or March. The greatest demand for fine dessert pears is in January, or at Christmas and New Year's, and a little later, when winter parties are held. After the first of February, fresh pears do not sell so readily, however good their quality.

Now what are the most promising varieties of winter pears, new or old? What are the best keepers, without artificial means? These are questions which I should like to see discussed at length by cultivators, in our horticultural journals. For myself I can throw but little new light upon this subject. I am rather seeking information from fruit growers of large experience.

I trust that the editor of this Magazine, who has given us so valuable a list of "one hundred fine pears," will now give us a list of fine winter pears, which promise to be good keepers, with comments setting forth their known qualities when grown in this country. That there are a great number of late pears now under trial, in the hands of leading horticulturists, I am fully aware. To mention these, and give an opportunity for more extended trials and reports, would be of great service to the fruit-growing fraternity. At the last meeting of the National Pomological Society, Mr. Nelson, of Indiana, declared "all winter pears to be a humbug." I by no means subscribe to this opinion, and I hope soon to see the charge most thoroughly disproved.

We shall endeavor to comply with the request of our correspondent at an early opportunity. For although many fine winter pears were named in the article referred to there are others equally valuable. ED.

VINEYARD CULTURE OF THE GRAPE.

BY GUSTAVE EVERS.

HAVING been attached to the army for the last four years, and not at present in any employment, I embrace the leisure opportunity to offer a few remarks upon the cultivation of our hardy grapes.

In the first place, I should like to ask our farmers and owners of land, why they do not grow the grape for the purpose of making wine? If they have suitable ground, (and there are few who have not,) I can prove to them, from my own extensive observation, that an acre of suitable land, planted with grapes, will produce twice the amount of money that can be obtained from any other crop.

I have found that the grape growers in New Jersey, West Virginia and Ohio, (most of them Germans,) after the vines come into full bearing, which is usually the fourth year from planting, calculate upon a profit of from \$800 to \$1000 per acre a year, from the sale of wine and brandy.

A vineyard should be situated on the southeast side of a hill or rising ground; and, if possible, near a river, or flowing stream of water, which would be sure to prevent the water from lodging in the subsoil, which is injurious to the grape roots as well as to the juice of the grape. If the soil is retentive of wet it should be underdrained, to take off all superfluous moisture.

The grape vines should be planted in rows, and these rows must run so that the grapes are as much as possible exposed to the sun. The rows where the grape vines are planted out, should be trenched two to three feet wide and eighteen inches deep, and in the bottom of these trenches, if possible, should be put a good quantity of bone manure and sods, so that when the roots go down they will find a good rich soil. It is well known to cultivators of vines that they require a great deal of manure to grow good grapes.

The vines, after being planted one year, should be pruned in the month of March down to two eyes; this will give two

canes the second year; these again should be pruned back at the same season the second year to two eyes; this will give four canes for the third year: two of these four canes may be pruned back to four or five eyes, and may bear one or two bunches each; the other two canes must be pruned back to two eyes each, and no fruit allowed to grow on the same, as these two canes are to produce four fruit canes for the fourth year, which will, when the vines are strong and thrifty, produce twelve bunches; and these twelve bunches will usually weigh about nine pounds.

Now let us see what will be the result of such a crop, and the profit from a single acre of vineyard, as I have stated before.

Twelve hundred grape vines are to be planted on an acre; these will produce nine pounds of grapes to a vine, which amounts to 10,800 pounds of grapes to the acre. Eleven pounds of grapes will make one gallon of wine, and 10,800 pounds of grapes will give 981 gallons of wine to one acre of vineyard. A gallon of good wine will sell for \$2.50; this would make \$1352.50 to the acre, without the brandy, which is distilled from the remainder, after the wine is pressed out. This will give \$1000 to the acre for the fourth year, and leave \$350 for expenses, without that received for the brandy, which amounts to considerable. But suppose my estimate, as some may do, extravagant; if only half, it will still amount to \$400 or \$500 per acre. What crop will pay better?

The best varieties in cultivation, to produce good wine, according to my observation, are the following:—Catawba, Delaware, Clinton, and Norton's Virginia. There are a great many new seedlings introduced of late, but I cannot say anything of their quality in regard to making wine, as I have not seen any of them, but I hope that all of them may be superior to those I have named.

Our correspondent has forgotten the Concord, which Mr. Husman of Missouri, good authority, says makes the very best wine. Ed.

POMOLOGICAL GOSSIP.

THE GREELY PRIZES.—The meeting of the Committee for awarding the Greely Prizes for Fruits, was held in New York on Tuesday evening, December 12th, at the house of Wm. S. Carpenter, Esq., 138th Street. All of the Committee were present, viz.: Dr. John A. Warder of Cincinnati, Ohio., C. Downing, Newburgh, N. Y., Dr. Ward, Newark, N. J., Wm. C. Ferris, P. Quin, and Wm. S. Carpenter, N. Y., and Dr. Sylvester of Lyons, N. Y. The Committee met at 3 o'clock, and after examining the apples offered for prizes at this meeting, immediately proceeded to business, and after careful deliberation decided as follows:

For the best winter apple, combining in the largest degree the requisites set forth in Mr. Greely's offer, the prize of \$100 to the Baldwin.

For the best pear, without regard to season, and combining in the largest degree the requisites of Mr. Greely, the prize of \$100 to the Bartlett.

The prize for the grape was left open another year.

In making this award the Committee wish it to be understood that this decision does not give these fruits any superiority over many others. But that of the several sorts offered for premium these, in their opinion, do combine the greatest number of requisites for a popular fruit, and that, while they estimate them at their full value, there were others which they individually prefer, and would cultivate for their own use, to the exclusion of either.

Having, by the politeness of Mr. Carpenter, been present at the meeting of the Committee, we are enabled to give a brief report of this most interesting meeting of pomologists, and to congratulate the Committee upon the unanimity with which their decisions were made, as also other decisions in regard to pears and apples, which we shall note below.

To understand fully the action of the Committee the programme of prizes offered by Mr. Greely should be carefully read; but as we have not a copy of them at hand, nor ever knew what they were until we heard them read at this meeting, we are unable to state what they were; but, in substance,

that the fruits, to obtain the prize, should possess all the qualities which should render them popular throughout the entire Middle and Northern States.

The varieties presented for prizes were few in number, comprising the Hubbardston Nonsuch, Northern Spy, Baldwin, Tompkins County King, Rhode Island Greening, and two or three other kinds for the apples; and the Bartlett, Sheldon. Duchess, Hovey (Dana's), Lawrence, and three or four other sorts for the pears.

From these the Committee were to award the prizes for some one variety of each.

At this meeting fine specimens of the Tompkins County King, Northern Spy, Rhode Island Greening, Baldwin, and a seedling were shown. Messrs. Hovey & Co. of Boston also contributed 27 varieties of dessert pears, among them several new sorts, and specimens of Dana's Hovey and Augustus Dana. Ellwanger & Barry also sent 25 varieties of dessert and 6 of cooking pears. This fine show of winter fruit, probably the largest ever made in New York, added to the interest of the meeting, and the tasting and discussion of their merits elicited much information.

At the conclusion of the business of awarding prizes the Committee invited us to act with them in making up a list of pears and apples, which they thought would be of great value to cultivators, especially amateurs, who are just commencing fruit culture.

Mr. C. Downing moved that the meeting decide upon a list of the best 6 pears, and the best 6 apples—summer, fall and winter—which, in the opinion of the Committee, are especially worthy of general cultivation. The following is the list, with the number of votes for each :

PEARS.

Summer.	Autumn.	Winter.
Manning's Elizabeth, 5.	Sheldon, 8.	Lawrence, 7.
Rostiezer, 5.	Seckel, 6.	Hovey, 5.

APPLES.

Summer.	Autumn.	Winter.
Red Astrachan, 5.	Gravenstein, 6.	Northern Spy, 5.
Primate, 6.	Porter, 6.	Hubbardston, 6.

The Committee numbered eight members, and the Sheldon received the unanimous vote of the Committee. In making this decision it will be seen that many of the very best pears are left out, and such as none of the Committee would leave out of their collection. But in confining the number the above were the choice of a large majority of the Committee. The result of such a vote shows that no collection can be considered complete without at least 24 varieties of pears.

In the evening, after partaking of the hospitalities of Mr. Carpenter, the Committee, with several invited guests, among whom were the Hon. George Bancroft, Professor Thurber, A. W. Harrison, Philadelphia, and I. Buchanman, New York, sat down to taste and discuss the several varieties of pears, of which specimens were before them, enabling them to test their qualities from the two localities of Massachusetts and Western New York. After the various kinds had been eaten, we believe there was no division of opinion that the Hovey was fully equal to its reputation, and could safely, as Mr. Bancroft said, be called "perfectly delicious."

At the conclusion of this trial of pears, Mr. Bancroft remarked that, before the Committee separated, he could not omit to return his thanks for the opportunity of attending such a fine display of fruit, and such an interesting pomological meeting, and that especially were we indebted to Mr. Carpenter for bringing the gentlemen together; his interest in fruit culture was ardent, and no one individual better deserved the thanks of the community than Mr. Carpenter. Mr. C. M. Hovey followed Mr. Bancroft. He thanked Mr. Carpenter for the opportunity of being present, and he sent his small collection of pears as a slight token of his friendship and esteem for one who had labored so long and so zealously in awakening an interest in fruit growing around New York. Almost distracted by the apathy of her cultivators in developing this branch of horticulture, he had still gone on—almost alone—in his exertions to make known our best fruits, through the medium of exhibitions, and by his own extensive collection. He wished him continued health and prosperity, and trusted his labors would long be continued, and that, whatever his success, he would receive the grateful thanks of

every pomologist in the country. Dr. Ward, Dr. Sylvester, and Dr. Warder, each paid a just tribute to Mr. Carpenter's labors, and the meeting adjourned to another year.

FLORICULTURAL NOTICES.

NEW DOUBLE VIOLET,—REINE DES VIOLETTES.—This is the name of a new variety, the flowers of which are as large as, and much the form of, the large flowering double cherry. Color white, spotted with violet, deliciously fragrant, perfuming the air for a long distance around; it has also the peculiar advantage of blooming in the autumn, when the flowers are larger, and of a purer white than in the spring. For conservatory purposes it will be found well worthy of its name. The flower stems are long, four to five inches in length, rendering it a most useful kind for cutting for bouquets.

AMERICAN VERBENAS.—We are glad to see our leading cultivators begin to appreciate American things. Mr. Peter Henderson of Jersey City says "it is high time we should begin to appreciate more home productions." We have urged this in our Magazine for full twenty years, and raised at least some fifty fine varieties, which have been described in our pages, and which, for a time, were among the best in our collections. Some of them, particularly *America* and *Orb of Day*, were also found in English collections, the latter having been extensively grown for Covent Garden market. The rage for imported varieties of inferior quality, drove our cultivators from the field, and for a long time foreign varieties have been sought after. We think it is "high time" to look about, and encourage home productions, and we shall soon have varieties superior to anything from abroad.

861. *BERTOLONIA GUTTATA* Hook. SPOTTED-LEAVED BERTOLONIA. (Melastomaceæ.) Madagascar (?).

A hothouse plant; growing two feet high; with purplish flowers and var. foliage; appearing in spring; increased by cuttings; grown in loam, leaf mould and sand. Bot. Mag., 1865, pl. 5324.

A "lovely Melastomaceous plant," with green leaves, ele-

gantly dotted with yellowish white, and darkly shaded on the nerves, brownish beneath. The flowers are small, in terminal heads, and of a pale purple or pink. Its distinctly spotted leaves will render it a decided favorite. (*Bot. Mag.*, Aug.)

862. SCUTELLARIA AURATA VAR. SULPHUREA. SULPHUR-FLOWERED GOLDEN SCUTELLARIA. (*Labiatae*.) Brazil.

A greenhouse plant; growing one foot high; with yellowish flowers; appearing in summer; increased by cuttings; grown in light rich soil. *Bot. Mag.*, 1865, pl. 5525.

A Brazilian species, found by M. Barraquin in Para. It has, however, no very marked beauty, but forms a pretty addition to extensive collections. (*Bot. Mag.*, Aug.)

863. PSAMMIA LONGICOLLA *Hook.* LONG-NECKED PSAMMIA. (*Ericaceae*.) South America.

A greenhouse plant; growing two feet high; with crimson and green flowers; appearing in spring; increased by cuttings; grown in light peaty soil. *Bot. Mag.*, 1865, pl. 5526.

A beautiful plant, allied to the *Vacciniums*, having long slender branches, and deep green leaves, with clusters of drooping flowers at the axils of the leaves. The flowers are crimson, tipped with green. It approaches the *Thibaudia*, but appears to belong to *Psammia*. (*Bot. Mag.*, Aug.)

864. PRIMULA CORTUSOIDES VAR. AMENA. DEEP-COLORED CORTUSA-LEAVED PRIMROSE. (*Primulaceae*.) Japan.

A greenhouse plant; growing a foot high; with deep purplish flowers; appearing in spring; increased by cuttings; grown in light rich soil. *Bot. Mag.*, 1865, pl. 5528.

A new and extremely handsome variety of the *P. cortusoides*, received from Japan by Messrs. Veitch. The foliage is neat and pretty, and the whole plant, on account of the size of the umbels and flowers, and the deep, almost purple color of the latter, is greatly to be preferred to the native Russian species. It is not common in Japan, and is supposed to have been introduced into their gardens from Siberia. (*Bot. Mag.*, Aug.)

865. CALATHEA VEITCHIANA *J. Veitch.* MR. VEITCH'S CALATHEA. (*Marantaceae*.) South America.

Of all the *Marantas*, so remarkable for the beauty of their ample foliage, there are few species, if any, which can take

higher rank in ornamental culture than *Calathea Veitchiana*. It has a large green leaf, deeply edged with black green, and an inner line of the same color. It also has a sceptre-like scape and dense flower-head; the bracts imbricated all round, and the upper ones empty, in which it differs from any of its congeners. It was found by Mr. Veitch in Japan, and is deservedly a most beautiful species. (*Bot. Mag.*, Oct.)

866. *DIANTHUS CHINENSIS*, VAR. *LASCINIATUS*. DEEPLY-CUT-PETALED INDIAN PINK. (Caryophyllaceæ.) Japan.

An annual plant; growing a foot high; with mauve colored flowers; appearing in summer; increased by seeds; grown in rich garden soil. *Bot. Mag.*, 1855, pl. 5536.

This is the now well-known Japan pink *Dianthus Heddewigii*, var. *lasciniatus* of our gardens, which Dr. Hooker thinks only an improved variety of the old India or Chinese pink, and that the variety is "due to the continued influence of rich soil, or to the skill of cultivators, through some other medium." But whether only a variety, or a distinct species, it is one of our most ornamental annuals, and well deserves the place it now occupies in our gardens. The immense flowers, 4 to 4½ inches in diameter, the petals delicately cut into long fringes, both combine to render it prominent in every collection. (*Bot. Mag.*, Sept.)

867. *DENDROBIUM TATTONIANUM* Hook. LORD EGERTON'S DENDROBE. (Orchideæ.) North Australia.

An orchideous plant; with yellowish flowers. *Bot. Mag.*, 1865, pl. 5537.

A new and pretty species, of easy cultivation, producing slender stems, a foot or so high, covered with yellowish flowers. It is pleasantly fragrant. (*Bot. Mag.*, Sept.)

868. *STACHYTARPHETA BICOLOR* Hook. TWO-COLORED BASTARD VERBENA. (Verbenaceæ.) Bahia.

A greenhouse plant; growing a foot high; with greenish blue flowers; appearing in spring; increased by cuttings; grown in light rich soil. *Bot. Mag.*, 1865, pl. 5538.

A rather pretty plant, with verbena-like foliage, and short spikes of purplish flowers, which change to a greenish blue, with a white throat. The flowers are about an inch long, funnel-shaped. (*Bot. Mag.*, Sept.)

869. MESEMBRYANTHEMUM ACINACIFORME *Linn.* SCIMETAR-
LEAVED FIG MARIGOLD. (Ficoideæ.) Scilly Islands.

A greenhouse plant; growing a foot high; with purplish flowers; appearing in summer; increased by cuttings; grown in light rich soil. *Bot. Mag.*, 1865, pl. 5539.

An old inhabitant of English gardens, and considered the finest of the extensive genus to which it belongs. Of late years the merits of this as well as other species of the Fig Marigold, have been overlooked, and Dr. Hooker remarks that he figures this in order to draw attention to a tribe too much neglected. It has thick fleshy foliage, of a glaucous green, and flowers measuring four inches in diameter, of a rich purple. The plants grow in a light, warm sandy soil, and bloom all summer. (*Bot. Mag.*, Sept.)

870. DENDROBIUM JOHANNIS *Reich.* MR. JOHN G. VEITCH'S
DENDROBE. (Orchideæ.) North Australia.

An orchideous plant; with brownish flowers. *Bot. Mag.*, 1865, pl. 5540.

Another orchid from North Australia, and although not remarkable for its beauty, it is so easily cultivated it will be sought after. The flower stems are a foot long, and covered with small brownish colored flowers, with a yellow centre. It was sent home by Mr. Veitch. (*Bot. Mag.*, Sept.)

871. PHALÆNOPSIS SUMATRANA *Kor.* SUMATRA PHALÆNOP-
SIS. (Orchideæ.) Sumatra.

An orchideous plant; growing 6 inches high. *Bot. Mag.*, 1865, pl. 5527.

A beautiful species, introduced into German collections many years ago, but now first flowered in English gardens. It has pure white flowers, elegantly barred transversely, with deep rose. It is of easy culture. (*Bot. Mag.*, Aug.)

872. CAMELLIA GUISEPPE BIASSI. Garden Hybrid.

A greenhouse plant. *Ill. Hort.*, 1865, pl. 442.

A new Italian variety, belonging to the class of *perfections*, and one of the most remarkable of this class. The flowers are of the largest size, pure white, very slightly striped with soft rose; the petals are numerous, large, round, imbricated with the most perfect regularity, leaves medium size, clear shining green. It has all the good qualities which will make it a favorite with amateurs. (*Ill. Hort.*, June.)

873. CAMELLIA VAR. ADRIANA. Garden Hybrid.

Illustration Horticole, 1855, pl. 453.

A new and handsome variety, originally from Italy, but has flowered in the establishment of M. A. Verschaffelt, and has proved a free flowering and fine kind, having a neat habit, beautiful foliage, and flowering abundantly and freely. It belongs to the class of *Perfections*, that is, imbricated to the centre. Color, deep rich crimson red, with very large outer petals. It has all the qualities which constitute a fine Camellia. (*Ill. Hort.*, Aug.)

874. MILTONIA CEREOLA *Nob.* CRISP-FLOWERED MILTONIA.
(Orchideæ.) Brazil.

An orchideous plant ; with white and purple flowers. Illustration Horticole, 1855, pl. 446.

A very beautiful orchid, with white flowers, and a purplish lip. It was sent to Ghent by M. H. Gautier, who discovered it in Brazil. (*Ill. Hort.*, Aug.)

875. ALTERNANTHERA SESSILIS VAR. AMÆNA. GRACEFUL-FLOWERED ALTERNANTHERA. (Amarantaceæ.) Brazil.

A greenhouse plant ; growing six inches high ; with crimson and green foliage ; increased by cuttings ; grown in light rich soil. Illustration Horticole, 1855, pl. 447.

A very pretty ornamental foliaged plant, with crimson, green, and brown leaves, growing only six inches high, and of a dense tufted habit. It will, like others of the same family, be an admirable plant for bedding out in summer. (*Ill. Hort.*, Aug.)

FICUS ELASTICA.

BY THE EDITOR.

FOLLOWING the rage for bedding plants, comes a purer and better taste for real objects of beauty. These are the fine foliaged plants, which are more in keeping with other objects of ornamental plantations, and harmonize better with their larger growth. Bedding plants and annuals are admirable in their place, when appropriate grounds are set apart for their decoration, or when parterres are especially arranged for that

purpose ; then they are really gay features, and claim all the care and attention which may be devoted to them to bring out their superior qualities.

But for the lawn, or in the neighborhood of numerous trees, they are out of place, and cannot compare with the rich foliage and gigantic growth of such plants as Cannas, Wigandias, Ricenas, and similar objects. These are rightly taking the place of verbenas, gazanias and similar things,



1. *FICUS ELASTICA.*

giving as they do not only a tropical aspect to our grounds, but flourishing in the summer season with all the vigor of their native clime, are always attractive in their strong growth, stately appearance, and rich broad foliage.

Among the many plants of this character is the *Ficus elastica* (FIG. 1) or India Rubber tree, whose merits have been overlooked. In the French gardens it is made a conspicuous object, its large, long, thick glossy foliage resisting the winds, which injure many plants of more delicate texture. Grown in good sized pots, and plunged in the open ground, or on the

lawn, so as to cover the pots, it has the appearance of specimens planted out in the soil; and properly watered it grows rapidly, puts forth its immense leaves, and is a stately and elegant object the whole summer. Before the approach of frost the plants are lifted and removed to a cool house, where they are scarcely less ornamental than in the open garden. If no greenhouse or conservatory, a light cellar will winter the plants. By judicious pruning and pinching the plants may be kept dwarf and bushy for several years, and when too large to easily handle, young specimens may be raised to take their place. We commend this fine plant to the attention of all lovers of rich foliage.

General Notices.

SNOWDROPS ON LAWNS.—In the month of May last, we had an opportunity of paying a visit to the Royal Botanic Garden of Edinburgh, and we need scarcely say that we found it, as usual, full of subjects of great interest to all lovers of herbaceous plants, shrubs, and trees. Amongst other things worthy of notice we were more particularly struck with the effect produced there in early spring by Snowdrops on the lawns. The roots of this spring favorite had been planted in patches in the greensward, and it had burst forth into full bloom on the melting of the late snow. The effect was most pleasing at this early period of the year. We believe the idea of using the Snowdrop in this way first suggested itself to Mr. McNab a few years ago, and his example is now followed in many other parts of Scotland.

It may appear at first sight that the scythe or mowing machine would eventually prove fatal to the plant by the destruction of its leaves. This, however, is not the case. The leaves are formed very early in spring, and have performed their functions before the grass requires to be cut; a store of nourishment has already been laid up, and the bulbs lie dormant under the sward until the following year, when, at the proper season, they again throw up their leaves and stems, and burst into bloom. Any bulbs which require a summer to ripen their leaves or form their secretions, would not be suitable for the purpose to which the Snowdrop is applied in the Edinburgh Garden.—(*Gard. Chron.*)

LILIUM AURATUM.—With me, one bulb of this lily has this year produced two stems, each measuring two and a half inches in circumference at six inches from the surface of the soil, the highest stem measuring eight feet in length, the other seven feet and nine inches. The number of leaves is 185, and 20 flowers, on an average 10 and 12 inches in diameter. The variety is one of the finest I have seen. The first and strongest offset I

had from this plant has this year produced three flowers, each measuring 13 inches in diameter.—(*Gard. Chron.*)

SEASONABLE HINTS ON DECORATIVE GARDENING.—May I take the liberty of indorsing some of your remarks on Spring Gardening lately, particularly about old fashioned plants? I hope we shall be able to resuscitate a good many of these before long. In the mean time, let me advise those who have any, to commence increasing them at once,—for example, Daisies, both white and red, and the old-fashioned Hen-and-Chicken, which latter I have latterly been unable to find anywhere. We have no summer, or, as you term it, autumn Ribbon plant equal to a daisy, for completeness of effect in lines; but the ground must be planted full at first, and not left to be filled by the growth of the plants. Now is the time to divide them for securing a stock. They may be pulled into the smallest possible pieces, and there is even time before the autumn planting to divide them again. If space runs short, there is no better position for them than between the asparagus beds.

Let us suppose, for example, that three rows of daisies are wanted, say white, next to that pink, and then the fine dark red. I remember to have seen one in Germany of a blue, or perhaps more correctly, a purple tint; this would be invaluable for a fourth row, and as most things that are grown in Germany are to be had in England, we may hope to hear of this purple daisy soon. Polyanthus and Primulas should also be treated in a similar way at once. The new varieties introduced by Mr. Veitch, from Japan, will be grand acquisitions to us for the spring season, if they should prove hardy. Our own single colored varieties have been strangely neglected of late years, considering their great beauty and their easy culture. Pansies should also be carefully looked to. If the cuttings that should have been put in last month are struck, they will now be ready to be planted out. Young plants are best; they begin to bloom in the autumn, and continue on up to June; but there is still time to get fine plants by autumn, if the cuttings are put in now. Seed should be sown at once for mixed beds.

The present is, moreover, a good season for taking into consideration the general arrangements for spring, and sowing such seeds as *Silene pendula*, red and white, and *Myosotis* of different sorts, if not done previously; indeed, any annuals that it may be wished to try, such as *Collinsias*, *Saponarias*, red and white, *Virginia Stocks*, *Lupins*, &c.; the latter are fine for tall rows.—(*Gard. Chron.*)

CYCLAMENS.—As the season has arrived when our stock of these charming spring flowers should be examined, and if necessary, shifted, a few notes on their culture may not be unwelcome to many. Though few plants will endure harsher treatment than some of the varieties of *Cyclamen*, yet few, if any, will more thoroughly repay the cultivator for a proper study of their habits, or attention to their more immediate requirements. There are many excellent practitioners in other matters who never could treat *Cyclamens* with anything like success. The cause of failure was

always attributed to a constitutional weakness in the bulbs, but I may be able to show that the fault lays in an other direction.

It is a fact that the demand for flowering bulbs of *Cyclamens* has from the time of the first introduction of some of the varieties of *C. persicum*, been greater than the supply; the consequence has therefore been that seed of some of the better varieties has been imported in quantity, and some has also been saved rather promiscuously from varieties in this country. From the time of sowing this seed saleable bulbs have been produced, having been pushed on in a high temperature, in often less than from 18 to 24 months. This treatment, so inconsistent with the general habits of *Cyclamens* which are found near the base of their native hills embedded for weeks in snow, greatly weakens the young bulbs, causing them to have but a very small crown. This however is but one of two causes which operate unfavorably in the case of *Cyclamens*. The whole of the seedlings just named are in demand. They are therefore kept and grown on, without its ever having occurred to the cultivator that, as might have been imagined, inter-impregnation among the varieties had taken place; thus primitive species have been broken into, and though an occasional novelty has sometimes been met with, not more than 20 per cent. could be counted upon as being fit for the painstaking cultivator. And yet who thinks of throwing away a *Cyclamen*? I say, therefore, if quintuple the amount is given for them, choose good ones. Have strong, stiff, erect stalks, pure-colored flowers, substance, and good form, and there need be no fear of failure.

As a rule, the *Cyclamen* would succeed better than it does if it were kept cooler than we usually keep it, except when, by a little gentle forcing, it is wanted in flower earlier than it is customary to have it. It will however at all times have finer flowers if placed in a gently heated airy atmosphere, just when the blossoms are beginning to expand. In order to keep *Cyclamens* as long in bloom as possible, it is requisite to remove them to a cooler temperature than that in which they have been when the flowers have attained their full size. After flowering they should be removed to an outer airy situation, where they will have the benefit of the morning and forenoon sun, but they like a little shade later in the day. They do well either plunged in pots, or turned out under an east wall, taking them up when they have commenced growing, or before cold, wet, autumnal weather has set in.

The only compost in which I have seen *Cyclamens* thrive is a mixture of two parts turfy yellow loam, one of peat and thoroughly decayed leaf-mould, mixed together, one of thoroughly rotted cow-dung, sifted very fine, and a dash of sand—the latter being placed around the roots. Let these materials be thoroughly incorporated and made as firm as possible. The bulbs, which should be kept well up, must nevertheless be firmly fixed in the soil.

In saving seed, let it always be done from the most distinct-colored flowers. Any deviation from this mostly produces blossoms of a washy, indistinct, and often displeasing hue. Sow as soon as the seed is gathered. Never, however, permit a plant to seed unless you expressly wish it to do

so, as seed-bearing weakens it. Seedlings sown as I have stated would be sufficiently large to prick off in the early part of June; no place suits them better than a properly prepared and beaten border under a wall having an easterly aspect. Planted out here they make nice little bulbs for removal in the autumn, thus saving much unnecessary labor. Having flowered them, and tested their properties, they might, if there is sufficient room, be planted out along the front edge of a conservatory or greenhouse border, where they might be permitted to remain until the soil in the immediate neighborhood of their roots had occasion to be renewed. Thus situated they will flower well. Mr. Parsons of Danesbury, an excellent cultivator, treats them in this way; and in addition to their general sweetness and gaiety he is thus enabled to cut thousands of blooms every year for indoor decoration. (*Gard. Chron.*)

IRÉSINE HERBSTII, ALIAS ACHYRANTHES VERSCHAFFELTII.—I am pleased to learn that this has succeeded so well at Heckfield, and that it is likely to become an established favorite in our flower gardens. It is now being sought for in all quarters. I have received many letters respecting its culture and color, the dulness of which in most cases is complained of. I find, however, that all the plants which have proved unsatisfactory have been in an open situation exposed to the full rays of the sun. Nevertheless, I have no hesitation in saying that atmospheric influences have little to do with the color, but soil and situation may; for instance, at Worksop, three miles from here, masses of it are as badly colored as those at Battersea. Again, at Handsworth, 16 miles from here, they are the same, while at Osberton, as many can testify, they are now magnificent. As to shade, one of the workmen at the Crystal Palace said to me, “We have some of the *Achyranthes* in the borders, shaded by shrubs, that are nicely colored, while, as hundreds can prove, those exposed to the sun near the Rose Mount are anything but good.” Mr. Wills of Oulton Park, when speaking of it, says, “the plants appear to want more moisture and a more shady position than I have seen accorded to them.” It has doubtless, as I have stated, been wrongly treated in most places. Of this there can be no question: for instead of being planted in the shade it has been fully exposed to the burning sun. I am therefore still, I think, in a position to prove that exposed beds lying dry and fully open to the sun’s rays are not suitable to the successful culture of this plant. The past comparatively sunless weather and the soaking of rain the beds have had, have effected a marked improvement in the color of the plants—a circumstance which proves what I have previously stated, that shade is better than the hot sun; when exposed to the latter the color has a brown cast, but when planted in a more shady situation it is magnificent. Even my own plants have wonderfully improved since I sent the boxful for your inspection. I therefore repeat that I feel fully justified in saying what I previously did respecting it. Let it not be understood, however, that this plant absolutely requires a moist shady situation, for it can be grown well, as Mr. Dwerrihouse states, in an exposed place; nevertheless the color is far more beautiful, without any of that brown cast about it when grown in comparative shade. In the case of

exposed places, soil and moisture have no doubt much to do with it, but when grown as I have before recommended, its color will be always fine.—
(*Gard. Chron.*)

Gossip of the Month.

BOOKS, &c., RECEIVED.—COMPANION POETS FOR THE PEOPLE, illustrated. This is a beautiful series of popular selections from the best English and American poets, issued by Messrs. Ticknor & Fields, Boston. Price, 50 cts. each. They have issued Household Poems, by Longfellow; National Lyrics, by J. G. Whittier; Lyrics of Life, by R. Browning; Songs of all Seasons, by Tennyson; Humorous Poems, by Holmes.

Other popular authors will be added to the series, which are uniform in size and general appearance.

ADDRESS before the National Association of Wool Manufacturers. By John L. Hayes, Secretary. Pamphlet, 80 pp.

THE PRACTICAL ENTOMOLOGIST, issued by the Entomological Society of Philadelphia gratuitously, requiring only 12 cents in stamps to pay the postage for a year.

EVERY SATURDAY. A Weekly Journal of Selected Literature, of 32 pages, rich, and overflowing with good things. Published every week and in monthly parts, by Ticknor & Fields, Boston.

Societies.

OHIO STATE POMOLOGICAL.

The thirteenth annual meeting of this Society was held at the hall of the Society in Cincinnati, Wednesday, Dec. 6.

The following officers were elected:—

President, Dr. John A. Warder.

Vice President, E. W. Campbell.

Secretary and Treasurer, M. B. Bateham.

There was a fine show of fruit. The Toledo Horticultural Society sent 140 kinds of apples and 5 of pears, and numerous others were contributed by various members. We shall refer to the doings of the Society in another number.

The following resolutions were passed at this meeting:—

Resolved, That we feel deeply interested in the great Department of Agriculture connected with our Federal Government; that we desire its entire success, and believe it destined to contribute immensely to the advancement of agriculture in the country; that we earnestly entreat the President of the United States to appoint a competent man to be the head of the Department of Agriculture, the incompetency of the present incumbent

being a source of general remark and complaint from the intelligent agriculturists of all parts of our extended country. It is therefore

Resolved, That in the opinion of this convention a change in the head of the Agricultural Department is imperatively needed for the best interests of the producing classes of the country, and the President of the United States is most respectfully petitioned to listen to the complaints embodied in the foregoing resolutions. (Signed) JOHN A. WARDER, President. M. B. BATEHAM, Secretary.

Massachusetts Horticultural Society.

Saturday, Nov. 4th, 1865.—An adjourned meeting of the Society was held to-day—the President in the chair.

The Executive Committee recommended an appropriation of thirty-one hundred dollars for premiums the ensuing year, to be divided as follows:—

On Gardens,	300	00
On Flowers,	1300	00
On Fruits,	1100	00
On Vegetables,	400	00
	\$3100	00

The following members were elected:—A. Flagg, H. B. Towle, Ives G. Bates, Dr. S. L. Abbott, H. Inches, F. Brooks, Dr. E. T. Wilson, Dr. H. B. Inches, L. J. Bradish, T. D. Morris, C. D. Russell, J. H. Rogers, A. H. Bowman, J. C. Pratt, C. E. Richardson, E. J. Andrews, J. W. Ayres, C. W. Jenks, J. C. Hubbard, Boston; Rev. A. B. Muzzey, Jas. Mellen, Dr. A. H. Ramsay, Cambridge; A. A. Childs, H. Clay, C. E. Backus, Dorchester; Geo. Frost, West Newton; Geo. L. Marsh, Watertown; E. H. Stanwood, M. S. Scudder, Grantville; A. Josselyn, Roxbury; R. Woodward, W. Sheafe, Brookline; C. H. Walker, Chelsea; Geo. W. Heath, J. Ward, C. B. Lancaster, J. H. Woodford, Newton; J. J. Raynor, Lexington; J. L. Gorham, Jamaica Plain; S. Hartwell, Lincoln; Geo. W. Whittle, Somerville; C. S. Adams, Framingham.

Adjourned one month to Dec. 2.

Dec. 2d.—An adjourned meeting of the Society was held to-day—the President in the chair.

The following members were elected:—George Keyes, Concord; Ed. C. Clay, J. McIntyre, H. Gleason, Malden; Joseph S. Potter, J. Burrage, S. G. Damon, Wm. Potter, West Cambridge; T. B. Hadley, Stoneham; A. C. Sanborn, East Cambridge; I. B. Carlisle, N. Cummings, J. Clark, Boston.

Adjourned two weeks, to Dec. 16.

Dec. 16th.—An adjourned meeting of the Society was held to-day—the President in the chair.

No business coming before the meeting, it was adjourned two weeks, to Dec. 30th.

Dec. 30th.—An adjourned meeting of the Society was held to day—the President in the chair.

The Chairmen of the several Committees on Gardens, Flowers, Fruits, Vegetables, and the Library, submitted their annual reports, which were accepted.

Wm. R. Austin, C. O. Whitmore, and Josiah Stickney were chosen a Committee to settle with Mount Auburn Cemetery.

The meeting dissolved.

Horticultural Operations

FOR JANUARY.

FRUIT DEPARTMENT.

The month of December has continued rather mild, with but little snow, and but three or four very cold mornings, the lowest having been 3°. This was succeeded by a warm rain, which left the ground free from frost. Such mild weather, with a good proportion of sunlight, has been highly favorable to early forcing, and plant houses of all kinds.

VINES in the very early houses will soon begin to color their fruit, and as this takes place whether now or next month, the house should be kept dryer, and a good degree of heat maintained, with plenty of air, when the weather will admit. If the heat of the border is not sufficient, which may be easily ascertained by removing a small portion of the covering, additional protection should be given. This, however, will depend upon the weather during the month. Vines in graperies and greenhouses should now be carefully pruned, washed and cleaned preparatory to growing by next month. If the houses are kept warm and the border well covered, the vines will soon begin to start, and the pruning, if neglected, cannot be done too soon. Cuttings for propagation may now be put in, and old vines may be budded, as we have directed in a previous volume.

ORCHARD HOUSES should have good attention. Air well in all moderate weather, and only close up when the temperature is likely to go below 8° or 10°. In houses with flues or hot water the trees may be got in readiness for growing next month.

SCIONS may be cut now in any favorable weather, and placed away in the cellar, in sand or common soil.

TRENCH and prepare ground if the weather will admit.

PRUNING may be commenced this month where there is a great deal to do. In fine weather it is a pleasant work. Clearing the trees of moss and rough bark may also be done at this season. It will save valuable time in April and May.

FIGS, GRAPES IN POTS, AND PEACH TREES may be introduced into the grapery or even greenhouse, if there is room.

STRAWBERRIES for forcing should now be brought from frames into the house, and placed on a warm shelf near the glass.

FLOWER DEPARTMENT.

With January the active labors of the industrious gardener begin. Where there is a large collection, and different houses for various plants, there is plenty of work. All the plants should be looked over, and if they require cleaning it should now be done. Climbers will need regulating, and preparations made to bring forward all the plants which have laid dormant up to this period.

CAMELIAS will now be in full flower, and will require careful watering, giving the plants occasionally a little weak manure water, syringing occasionally unless the house is kept very cool. Head in straggling plants that have done flowering.

AZALEAS will now begin to bloom, and as the flowers appear they will require more liberal watering. Plants intended for blooming in April or May should be kept in a cool house and sparingly watered. Improve every leisure time to tie the plants into a neat shape.

PELARGONIUMS will now be growing slowly, and getting strength for a good bloom. Keep the house quite cool, so as to obtain a short-jointed growth, and water rather more liberally. Turn the plants round once a week. Repot all plants not already done.

CINERARIAS should be shifted into their flowering pots. Keep cool, and near the glass. Fumigate often.

CALCEOLARIAS require precisely the same treatment as cinerarias.

ACHIMENES AND GLOXINIAS should now be potted for early bloom.

CALADIUMS should now be started into growth, placing them in a warm part of the house where the temperature does not fall below 60°.

BEGONIAS may be divided and repotted.

FUCHSIAS should be pruned, repotted, and started into growth.

PANSIES, raised from seeds in the autumn, and shifted now, will bloom beautifully all the spring. Keep on a cool shelf near the glass.

FERNS should be repotted and have more water.

AMARYLLISES may be placed on a lower shelf and watered, if they show signs of growing.

JAPAN LILIES should now have a good place near the light.

SCARLET GERANIUMS, intended for large specimens, should be repotted.

HEATHS may be removed to a warmer place as they show signs of blooming. Now is a good time to put in cuttings.

SEEDS of many kinds of annuals may be planted this month for early bloom.

DAHLIAS may be potted soon for early blooming.

CALLAS should have an abundance of water.

VERBENAS, PETUNIAS, and other bedding plants may now be propagated from cuttings.

ORCHIDS should have more water as the season advances, keeping the atmosphere moist and warm if they are making their growth.

GRAPES IN MASSACHUSETTS.

It is but a few years since it was deemed possible to enumerate Massachusetts among the grape-growing States. The Catawba and the Isabella, the prominent and almost only kinds ten years ago, were altogether too late for a climate whose products were granite and ice, and the parallel line of grape growing to any extent was confined to the latitude of New York, whose "Croton Isabellas" were almost a drug in the market. True, the Clinton was about that time heralded as the great variety which was to clothe our New England hills—even into Maine—with vine-clad fields, to vie with the rich vineyards of Ohio; but, unfortunately, it was not quite up to the quality which at least Massachusetts cultivators required in an eatable grape; and plantations of vines, purple with luscious fruit, were yet the dreamy phantasies of Clinton grape growers. Then came the famous Northern Muscadine, whose advent awakened fresh visions of magnificent grapes, in pound bunches, hanging in rich profusion in every man's garden. But this again was not quite up to the high commendation given it by a score or more of gentlemen who had tasted it from the original vine. The pound bunches have never made their appearance—only on paper.

But just as our Massachusetts cultivators despaired of rivalling Ohio as a grape-growing State came the Concord, which, like the good old town from which it was named and where it grew, will hold the same historical relation to grapes and grape growing in New England, that the honored town holds to our revolutionary period,—the first grand success in the production of a grape adapted to our northern clime, whose hardy branch

"Hangs out its clusters, glowing to the south,
And scarcely wishes for a warmer sky."

Its growth just at that time gave a new impetus to vine

culture throughout the country—cheered the hopes of doubting and despairing cultivators—and awakened an interest in the production of superior varieties, which has so far had no check, and which is destined to go on until our people are supplied with grapes equalling the famed “Golden Chasselas” of Thomery, and wines rivalling the most esteemed French :

“The Claret smooth,
The mellow-tasted Burgundy, and quick
As is the wit it gives, the gay Champagne.”

But we are straying from our subject, which was to introduce to our readers that portion of the most excellent report of J. F. C. Hyde, Esq., the Chairman of the Fruit Committee of the Massachusetts Horticultural Society, devoted to grapes. It is as follows :—

GRAPES.

The grape fever rages higher and higher each succeeding year. New varieties are eagerly sought for, and the older ones are being extensively planted. The public are hardly aware to what extent grape vines are being planted even in New England, to say nothing of the vast numbers that are yearly planted in other parts of the United States. It is astonishing to see what efforts are being made to procure new and superior varieties. One person claims to have thirty thousand seedlings, from good varieties, that he proposes to fruit and test. Another has ten thousand, and has already fruited some that have proved good. Almost every grape grower has his favorite seedlings, from which he expects great results. What is to be the result of all this effort, and we may say excitement, on the subject of grapes? That the public will be benefited we cannot doubt, though we have grave doubts as to the grape crop proving a profitable one to all who have embarked in it. The past season has been in some respects an unfavorable one for this fruit, as we have before had occasion to remark. The great amount of moisture, followed by cool nights and frequent and sudden changes, had the effect to rot and mildew the grape, so that some varieties suffered badly, or were wholly ruined. After

the rains ceased, and the drought began, the weather was favorable to the growth and ripening of the fruit which had escaped the rot.

The show of grapes at the annual exhibition was hardly up in quality, or quantity, to that of the year previous, though it was good. Owing to the arrangement of our tables at the annual exhibition this fruit did not have so prominent a place as it deserved. Some specimens of the Adirondac, grown in Cambridge by Davis & Bates, were exhibited and appeared well. The Creveling did not appear as well as the year previous. The foliage mildewed considerably, but the *fruit* very little. When fully ripe this is a very good grape. We have often remarked that after eating heartily of other grapes, we could always relish a bunch or two of the brisk, juicy and refreshing Creveling. It is earlier than the Concord, keeps much better, and far superior to it in quality. The bunch is rather too loose when grown on young vines, but age improves it in this respect.

The Iona, grown by Mr. Brackett of Winchester, was tested by us, and was fully equal to our expectations in quality; it is a superior grape. Allen's Hybrid did not add to its reputation this year, though our large vine, that stood entirely unprotected on the south side of our house, gave us a fair crop of good fruit. It mildewed and rotted but very little, less so by far than the Concord, which is regarded as being very hardy. It does not ripen its wood well, the new growth often being soft and pithy, at the fall pruning. There are, however, few, if any, better out-door grapes than this.

What shall we say of Rogers's Hybrids? Last year we spoke well of No. 4, and referred to some other Nos., but did not feel disposed to give a decided opinion upon their merits. This year, we are better prepared to speak of several of them, for the fruit of Nos. 1, 3, 4, 9, 15, 19, 30, 33, 39, 41, 43 and 49 have been carefully tested by us. No. 1 is a large-sized grape, reddish color when fully ripe, with a muscat flavor, some pulp, sweet and good, but rather late for this vicinity. No. 3 is a red grape, a little larger than the Delaware, or about the size of Iona, with just enough of the native flavor; tender, sweet and good. It is said to be the earliest of all

the Rogers grapes. It seems well worthy a trial. No. 4 has done well the past season, and we have been very much pleased with it; large size, black, good bunches, with berries equal in size to Black Hamburgh, not pulpy or foxy, nearly as early as the Concord, and a better grape. It keeps admirably, being nearly as fresh the 20th of December, as when picked from the vines; good bearer and a very desirable market fruit. This variety has improved from year to year, as have others of Rogers's Hybrids. It is a good grower and hardy vine.

No. 9 is a red grape, resembling No. 3, but not so good; the flavor is not equal to that of No. 3, though in other respects equal to, and very much like it. No. 15 is a very rampant grower, and, on our young vines, the fruit has been foxy, and with a somewhat hard pulp. We are satisfied that this variety will need a good deal of room to do well. Some regard this as the very best of all the Rogers numbers, but we cannot endorse this view, after having fruited it two years. No doubt it will prove a very prolific bearer, and perhaps valuable for market purposes. No. 19 next claims our attention, and this is one of the numbers that has been greatly praised and extensively sold. It is a black grape, of good size and fair quality, but not equal to No. 4 or 41. It does not keep so well as either of the others; bunch large, berry good size. It may prove a valuable market fruit. No. 30 was not fully ripe, and we say sour, pulpy, foxy, and among the poorest. No. 33 is a good grape. No. 39 we marked as inferior on a single trial of it. No. 41 is a black grape, handsome bunch and berry, ripens as early as Concord, perhaps earlier; sweet and good. No. 43 is a good grape, and by some regarded as equal to No. 3. No. 49 did not seem to be ripe on the 20th of September, and was not rated high. It was our good fortune to see most of the varieties, on the vines, in the garden of Hon. M. P. Wilder, and of tasting the fruit freshly plucked. Then, again, through the kindness of the some gentleman, we were furnished with samples at our rooms to test, which trial was made by some of our best judges, and the results are given above. Still later we were favored with an opportunity to visit Col. Wilder early in

December, and then again test some of the Roger's Hybrids; and we are happy to say that from all we have seen of the various numbers during the past year, we are very much better pleased with them than ever before; and truly believe that some of them are destined to become highly popular and valuable varieties, especially for market. We have given our judgment of these grapes, as they appeared this year, but may, from the experience of another year, change it as much as we have changed it the past year; for it is very certain that none can safely judge of a grape until the vine gets age and the fruit has been grown in different localities and under varying circumstances. So far as relates to quality, merely, we do not yet regard any of these grapes as equal to Delaware, Allen's Hybrid, Iona and others.

Our attention was called to some grapes sent to the President of the Society, by Mr. Moore, of Rochester, N. Y. They are called hybrids, and were raised by Mr. Moore from seed of the native grape hybridized with the foreign. The best of all of them was the Diana Hamburg, from the Diana crossed by Black Hamburg. We append a description of it, taken from Hovey's Magazine: "This is considered the best of the collection, clusters very large, six to eight inches in length, usually longer in proportion to breadth than the Hamburg, regularly shouldered, compact; berries roundish, larger than the Concord, dark crimson, with a rich purple bloom mingled with a fiery lustre in the sunlight; flesh perfectly tender, breaking to the centre and letting out the seeds like a foreign grape, of sugary sweetness, in flavor remarkably like the Hamburg but more aromatic and lively, fully equalling that excellent variety. The vine is a slow grower, making firm short-jointed shoots, with large buds and deeply lobed leaves of medium thickness, peculiarly crimped and often rolled inward; hardy and very productive. Fruit ripens after the Concord, and a week or ten days earlier than the Diana." This fruit did not appear to be fully ripe the 20th of September, but we formed a very favorable opinion of the variety from this one trial of it.

The "Clover-Street Black," was another variety from the same source; this, too, being a cross between Black Hamburg

and Diana; bunch large, shouldered; berries good size, black, with heavy bloom; flesh tender, with a sweet, lively flavor resembling Black Hamburg, but more spirited; seemed to be fully ripe the 20th of September. We regard this as a very promising variety, and hope and believe it will become still better with age, as this is its first year of bearing. The vine is said to be a good grower and hardy.

Hardy Chasselas is still another, said to be from a cross between Diana and Royal Muscadine, very hardy, and though the foliage is very foreign, it bears the sun well. The fruit, tested by us, was not quite ripe; still, it was good, and we desire another trial of it. It had but little flesh, and was quite juicy.

The White Musk, sent with the others, is said to be a cross between Isabella and some foreign white variety; decidedly poor flavor from some cause. We do not regard it as even promising, but it may greatly improve on further trial.

The fifth variety sent was the improved Clinton, from a cross between the Clinton and Black Hamburg. The fruit shows very little, if any, of the Hamburg quality, and seemed to be a slightly improved Clinton. We were not much pleased with it. In color, shape, size and flavor, it strongly resembles the Clinton. Some good cultivators in our midst have questioned if there have ever been any hybrids produced between the foreign and native grapes; but we think they should doubt no longer on this point, from the evidence which is accumulating year by year in proof of the fact. We have had another opportunity to test the seedling grape produced by Parker Barnes. It appeared better this year than last, and was pronounced by us a *good* grape. The bunches were about five inches in length, shouldered, berries fair size, nearly or quite equal to Hartford in this respect, oval shape, color black, early, being ripe the 9th of September, sweet and good, quite superior to Hartford, and nearly as good as a well-ripened Isabella. We think it worthy a more extensive trial. O. R. Robbins exhibited a grape said to be a seedling, but which so nearly resembled the Clinton that we are led to believe it to be a reproduction of that variety, with no improvement. We do not regard it as promising well.

At the annual exhibition there was a fine lot of grapes from Sanbornton, N. H., about which there has been much discussion. The variety resembles the Isabella in every respect, except that the wood is shorter jointed, and the fruit ripens earlier. We think, notwithstanding these facts, that it is the Isabella, grown under favorable circumstances; for we have not forgotten, how, a few years ago, our wisest pomologists were puzzled by some grapes shown by Mr. Cutter of Weston, which proved to be the old and well-known Isabella. Other seedlings have been shown, but none, as we remember, were deemed worthy of honorable mention. The older sorts, such as Isabella, Catawba, Concord, Hartford, Delaware, Rebecca and others, were, with few exceptions, inferior to those of former years, owing, in a large degree, to the rot and mildew, followed by the severe drought.

The time will come, and is not far distant, when our markets will be abundantly supplied with fresh grapes, cut every day from the numerous vineyards that will cover our hill-sides in the vicinity of Boston. Acres of grape vines are being planted in Massachusetts, and it is fair to presume that we shall ere long be independent of our Western friends, from whom we have received in years past large quantities of this fruit. Let the work go on, until we can have this most healthful fruit in abundance, and that, too, of the very best quality.

A new question will soon arise with our fruit growers: What shall be done with the surplus grapes? Shall we make them into wine, and supply the demand that now exists and will increase for a pure article for medicinal and other purposes?

IMPRESSIONS OF ENGLISH SCENERY.

BY H. W. SARGENT, ESQ.

WE have the pleasure of presenting our readers with another very interesting letter from Mr. Sargent, dated Torquay, Dec. 17, 1865.

“I write at 3 P. M. on this 17th of December, by an open

window, with Lauristinus, Geraniums, Magnolia grandiflora, Camellias, Roses, &c., in flower out of doors, and the villas and terraces abounding in Ilex, Evergreen Oak, Laurus nobilis, Italian Pines, Cork Trees, and everything which belongs to Southern Italy. There is no end of beautiful excursions and drives to Berry, Pomroy Castle, Powderham Castle, Exeter, Teignmouth, Portsmouth, &c., besides Luscombe House and Mamhead Park, of which two I will talk later. Since writing you, I have been to Bowood, Badminton (Duke of Beaufort's), Highnam Court (Mr. Gambier Perry's), where I went to see the Pinetum, and several minor places. We have been now to one hundred and eight country seats, and I have come to this conclusion:—They are all alike in certain marked and general features, viz., an *Italian Garden*, in which either rows or occasional specimens of Irish Yews preponderate, with a large sprinkling of English Yews, Cupressus macrocarpa and Govenia, trimmed into pyramids, or cones, or beehives, is invariably on *one*, generally *two*, sometimes three sides of the house, occasionally standard Portugal Laurels or Rhododendrons; but always a little helped with the shears. This Garden, separated from the Park always by a Ha Ha, sometimes plain, sometimes with a small, delicate wire fence on top of the Ha Ha, but more generally by an Italian balustrade in stone, with occasional pilasters, each pilaster surmounted by a vase filled generally with fine single specimens of geraniums. From this formal or Italian Garden, often of different grades, connected by large handsome flights of steps and with broad, straight walks, a curved walk leads to some pleasure ground, irregularly planted with masses of shrubs, especially Rhododendrons, occasionally some single specimen of the new evergreens, such as Araucarias and Deodars, the two favorites just now, sometimes the Douglas and Menziesii Fir, occasionally Pinsapo and Cephalonica, but very rarely the Cryptomeria, or any of the new pines. This pleasure ground is separated like the Italian Garden by the invariable Ha Ha from the Park, but without the balustrade, and generally without the wire fence on top. On the entrance front it is all open park, and sheep or deer (never cows) feed up to the very door. I should say, as a general rule, the formal Italian

Garden on one or more sides was always to be found attached to every place in England, large or small ; and as the windows of most of the houses open immediately upon it, and the garden itself is inaccessible by means of the Ha Ha, or through the gates which are locked, it renders it perfectly private to the family, and a very beautiful and stately appendage to the living rooms, and quite secure from interruption ; and as many of these gardens are otherwise adorned by classic vases, statues and fountains, the connection between the house and grounds is much more gradual and elegant than where there was less distinction between the pleasure grounds and park.

In my last letters I wrote you, I preferred Trentham to any place I had then seen, though I thought Biddulp Grange (Mr. Bateman's) and Elvaston Castle very wonderful as specialities. Had I written you a week ago I should have said Bowood—taking all things into consideration, house, Italian Garden, the best Pinetum I have seen yet, lake and park—far exceeds Trentham, and if you will look at your 'Gardens of England' you will see it, and no more perfect than we did, beautiful as I remember your views were. But this gives you no idea of the Pinetum, where the collection, especially of Pines, is greater, and the lake, fine as Trentham is, infinitely more beautiful than any ornamental water we have seen. And yet today, wonderful as Bowood is, we have come to the conclusion that Mamhead, twelve miles from here, the seat of Sir L. Newman, is the most beautiful place in England, though it has only a Park of 70 acres. Mr. Colman, in his agricultural tour 25 years ago, said this, and 18 years ago I also thought this, and wrote as much to the Horticulturist, and now upon my second visit, after this long interval, I am rejoiced to find it still holds its supremacy. In the first place, there is no country seat of the 108 we have seen which possesses such wonderful beauty of group, mass and single specimens, as well as such extraordinary combination of landscape and water, the most exquisite, long, graceful sweeps of lawn and hillside, clothed with the most majestic Cedars of Lebanon, Oaks, Limes, Beeches and Evergreen Oaks, with distant peeps of the ocean on one side and the

river Exe, a mile or so wide, on the other. As nothing but sheep is allowed in the Park the trees sweep to the ground.

The Italian Garden, of which I send you but a faint idea enclosed, is beautifully arranged and planted with the finest and most admirably trained specimens of the rarest trees. Among them, below the first terrace, is the finest *Abies Morinda* in England, very pendulous and glaucous, and quite sixty feet high; also, the finest *Deodars* and *Araucarias*, and a mass of *Rhododendrons*, 30 feet high and 160 feet in circumference, a perfectly round ball, and already, on the 15th December, in flower on the south side. In the rear is a mossy bank, planted with intervals of single *Rhododendrons* and *Cotoneaster*, which actually run down hill like vines, so luxuriant and graceful is their growth; *Lauristinus* and *geraniums*, in full bloom; a fountain, sparkling, in shape of a lily; the prettiest little old church, shaded by a grand old yew, form part and parcel of this wonderful place.

Lusconel, of which I also send you a carte, is in the bottom of a most luxuriant valley, down and through which it looks, amidst the most charming groups and masses of *Cedars of Lebanon*, oaks and beeches, to the sea. The ornamental grounds run up some distance on either side. The American garden, containing immense masses of *Rhododendrons*, *Azaleas*, *Gaultherias*, *Andromedas*, *Heaths*, &c.; wonderful single specimens of *Cedars of Lebanon* (the two varieties), *Deodars*, *Araucarias*, *Menzies*, and *Pinsapo*, *Firs*, *Golden Yews*, &c. Above and beyond is a very extensive and well-grown *Pinetum*.

For the mere purposes of study one place is as good as a hundred—the plan and character of all being alike, and differing only in extent and the natural character of the ground. Most of the great places have no especial view, but an indefinite extent of hill and dale, irregularly planted with immense trees. These are only saved from the appearance of intense dreariness by the presence of great quantities of deer, sheep and cattle. Upon the whole, I have been somewhat disappointed in my present visit here, from the entire absence of the many new weeping and variegated trees we see in the catalogues, and the comparatively rare appearance of the new evergreens. The *Deodar Cedar* and *Araucaria* are plenty

enough, occasionally *Cryptomerias* and *Taxodiums*, but hardly ever Golden Yews; and as for the Pinetums, during my four months here, I could count them upon my five fingers. I should say in conclusion, England of 1865 was generally England of 1845, with the exception of two or three new trees and the universality of Italian Gardens.

COMMENTS ON MANURES.—OXIDE OF IRON FOR PEAR TREES.

BY D. W. LOTHROP, WEST MEDFORD.

THE great number of fancy, concentrated, special, patent fertilizers (or by whatever other name we choose to designate them) are now so common and pretentious in the market—sustained in their competition with each other by innumerable puffs, as being panaceas for all feeble vegetation—that it is to be feared many have lost sight of, or faith in, the good old-fashioned, canonical, barn-yard manure! The latter needs no puffing, as the best cultivators *know* its value. It is older than the science of chemistry, and made its reputation hundreds of years ago. That chemistry should sustain it is much to its credit, though it has given us nothing better. According to an analysis at hand, a ton of ordinary barn-yard dung contains 1589 pounds of water, and of carbonaceous or vegetable matter, 272, making 1861 pounds. Of the remaining 139 pounds, 89 are sand, and six are oxide of iron and alumina—of no practical account—leaving only 44 pounds to cover the other ingredients of more or less value, as nitrogen, phosphoric acid, soda, lime, &c. This proportion of organic and inorganic matter, as it comes well reduced from the animal, seems by experience the best fitted fertilizer for all our commonly cultivated plants. Of course, the addition of hay or straw reduces its value. The great bulk of plants is carbon. This is absorbed principally from the atmosphere, in the form of gas, through the leaves, but to an extent is generated in the soil by the decay of vegetable substances, and is imbibed in solution by the roots. It is the daily bread of

plants, forming the body of woody fibre, while water forms their sap. Plants live and thrive of themselves; but to give them greater life and more profitable thrift, to enable them to seize with greater avidity their more common elements, *stimulants* are needed—or what may be termed a kind of medication—and the most important of these is ammonia (a combination of nitrogen and hydrogen), and next phosphoric acid and potash. They seem to constitute the essence of manure, and it is valuable in proportion as they exist, though other matters play important parts. Hence Liebig has pointedly observed: “*Carbonic acid, water and ammonia* contain the elements necessary for the support of animals and vegetation.” Of the great bulk of manure added to the soil, only a small portion directly enters the plant, though important in a secondary point of view. Its water, in a simple state, is superfluous, and so is much of its carbon as an available constituent. The humus, however, of barn-yard manure is said by chemists to generate acids which unite with ammonia, and set free the alkalies in the felspar of rocks. It also absorbs nitre and moisture from the atmosphere, and gives a higher temperature to the soil by fermentation. In fact, Dr. Dana has laid it down as the eighth principle of agricultural chemistry, that “*Geine* [humus] in some form is essential to agriculture.”

But dismissing this subject, I wish to speak principally of the *oxide of iron* as a fertilizer. This, if considered at all as a commercial manure, must occupy at least a fifth decimal point as to value. I hardly know whether I have a “prejudice” against it, or a legitimate objection. At any rate, it’s repugnant to my understanding!

A couple of enthusiastic fruit growers under my observation have purchased a quantity of *iron filings*, or *chips*, and placed them around their young pear trees, with a degree of hope, probably, that the result will be marked and advantageous. Nature supplies this element (iron) in all soils, but according to Prof. Johnson, she supplies it most abundantly in those that are barren! Hence, is it not a little remarkable that in search of a valuable stimulant for pear trees, such a forbidding article as oxide of iron should be seized upon?

We have heard of soils being deficient in soda, potash, and some of the more important acids, but who ever heard of a soil being injuriously or fatally deficient in iron? In the ash of the pear and apple wood there is less than one per cent. of iron in any of its forms. From this fact it would appear that if iron is ever useful, it is not so much in entering into the composition of plants as by a catalytic action in absorbing important gases.

But I am tempted to see what the chemists say further of this metallic oxide. The late Prof. James F. W. Johnson (above quoted), in his "Elements of Agricultural Chemistry," in speaking of the deficiencies of a certain barren soil, analyzed by Sprengel, observes:

"But all these *wants* would not alone condemn the soil to hopeless barrenness, because, in favorable circumstances, they might all be supplied by art. But the oxide of iron amounts to eight per cent. of this fine part of the soil; a proportion of this substance which, in a soil containing so little lime and organic matter, appears, from practical experience, to be incompatible with the healthy growth of cultivated crops. This soil, therefore, requires not only those substances of which it is destitute, but such other substances also, or such a form of treatment, as shall prevent the injurious effects of the large portion of oxide of iron it contains."

Further on, in speaking of this soil, he regards it "too rich in oxide of iron, which, when present in excess, is usually prejudicial to vegetable life." Mr. J. also alludes to this element in the soil of the red sandstone districts, where it collects and hardens in the subsoil in such quantities as to forbid the entrance of the roots, and which should be broken up and drained off.

In an article on fertilizers, in the Patent Office Report (1860), by Thos. G. Clemson, LL. D., a more favorable view of this article is taken. Under the caption "Oxide of Iron and Manganese," he observes:

"Little need be said of these two substances, since, though they exist abundantly in nature, and in most if not all cultivated soils, it is supposed their presence in plants is accidental, and always in small quantities. . . . As the oxide of iron is

known to occur in animal bodies, there is reason to suppose that its presence is essential to certain plants. Soils containing ferruginous matter are not benefited by the addition of organic or putrid animal manures. The peroxide of iron is reduced to a state of protoxide by the action of the organic matter which unites with a portion of the oxygen in the peroxide. Where the sulphuret of iron is found, a chemical action may be brought about by the addition of lime. The peroxide of iron absorbs and retains ammonia, and imparts it to plants as they require nitrogen, which is known to be a constituent of that gas and of organic matter."

He also speaks of some experiments being made in Europe, which go to show that some plants cannot ripen their seed without the presence of iron in the soil.

The following extract from Liebig, generally conceded to be the highest authority, presents this oxide in a still more favorable light :

"The oxides of iron and alumina are distinguished from all other metallic oxides by their power of forming solid compounds with ammonia. The precipitates obtained by the addition of ammonia to salts of alumina or iron are true salts, in which the ammonia is contained as a base. Minerals containing alumina or oxide of iron also possess, in an eminent degree, the remarkable property of attracting ammonia from the atmosphere and of retaining it. Vanquelin, whilst engaged in the trial of a criminal case, discovered that all rust of iron contains a certain quantity of ammonia. Chevalier afterwards found that ammonia is a constituent of all minerals containing iron ; that even hematite, a mineral which is not at all porous, contains one per cent. of it. Bouis showed also, that the peculiar odor observed on moistening minerals containing alumina, is partly owing to their exhaling ammonia. Indeed, gypsum and some varieties of alumina, pipe-clay for example, emit so much ammonia, when moistened with caustic potash, that even after they have been exposed for two days, reddened litmus paper held over them becomes blue. Soils, therefore, which contain oxides of iron and burned clay must absorb ammonia, an action which is favored by their porous condition ; they further prevent the

escape of the ammonia once absorbed, by their chemical properties. Such soils, in fact, act precisely as a mineral acid would do if extensively spread over their surface; with this difference, that the acid would penetrate the ground, enter into combination with lime, alumina, and other bases, and thus lose, in a few hours, its property of absorbing ammonia from the atmosphere. The addition of burned clay to soils has also a secondary influence; it renders the soil porous, and, therefore, more permeable to air and moisture. The ammonia absorbed by the clay or ferruginous oxides is separated by every shower of rain, and conveyed in solution to the soil."

Notwithstanding the favorable light in which this eminent chemist has placed oxide of iron as a fertilizer, powdered *charcoal* possesses a similar action, but surpasses all other substances in its power to absorb ammonia; and *decayed wood* is nearly as good as charcoal, and probably burnt clay is nearly as good as the wood, and either of the three *much better than iron*. If sawdust were put around young pear trees, say an inch deep, it would first serve as a mulching; secondly, it would absorb ammonia; and thirdly, in its ultimate decay it would furnish carbonic acid to the soil and roots of the plant. Burnt clay or sod, in connection with it, would probably be an improvement to the treatment. As iron rust is apt to lodge in the soil, and is so inferior to many other articles as an absorbent, few cultivators will wish to add more to their soil than it already possesses.

In an able article on the "Philosophy and Chemistry of Manures," in the Patent Office Reports (1861), the writer—probably Mr. Joseph Harris of Rochester, N. Y.—classes iron among the elements of the soil that are of little or no value, certainly never necessary to add them.

In another connection, Liebig observes that in some of the forms which iron assumes in the soil, it absorbs oxygen therefrom, and thus robs the roots of plants of an essential element. An application of lime is the remedy.

The application of iron to the soil around bearing pear trees, as a remedy for the *cracking* of the fruit, has been practised to some extent by good cultivators, but we think

only with imaginary success. If it had proved a remedy for the evil, we should all have known it; but now the cause of the cracking of the pear is supposed to be atmospheric, with a constitutional susceptibility in certain varieties to the disease. Place a Bartlett and Flemish Beauty, for instance, side by side, with the same treatment; the fact that the latter will sometimes crack while the former never will, shows that the defect is not alone in the air or soil, and the fact that the Flemish Beauty is in some seasons sound proves that it is not wholly in the aptitude of the fruit, or in the joint influence of soil and fruit. If it were produced from the soil and the various changes of the atmosphere, the Bartlett would sometimes crack. But it does not. Hence the evil lies in the atmosphere and the fruit. No remedy has as yet been discovered for it, though shelter will very much improve the old St. Michael, and that gives us a good hint.

As to what is a good fertilizer for pear trees in general, the question is not so difficult as the ways and means to procure what we know to be good. Barn-yard manures, or even those more rich in nitrogen, as night soil, are the best, with an occasional supply of wood ashes, guano, superphosphate of lime, or gypsum—especially as the trees become advanced to a bearing stage. As a cheap absorbent of ammonia from the atmosphere and from rains, gypsum or plaster is excellent. When this can be procured for the purpose, the oxide of iron, to my mind, should not be thought of.

FRUIT AND FRUIT CULTURE IN NORTHERN OHIO.

BY F. R. ELLIOTT, CLEVELAND.

THE season just past has been one of comparative success in fruits of nearly all varieties. Strawberries, being the earliest to ripen of the varieties, were abundant on young plantations, but old beds of, say three or more years, were in many cases a failure, and one late frost, just as Wilson's Albany—which is now the "million" plant—was in bloom, destroyed the crop in some wet and frosty locations. Nearly

all locations on the south shore of Lake Erie, and within the influence of the lake, however, were free from injury, and gave such returns that our Cleveland market was fully supplied, and thousands of bushels, as usual, shipped to less-favored localities. Wilson's Albany, Hovey, and Russell's Prolific are the varieties mostly grown—the first, because of its hardy vine and abundant bearer,—the second, because of its beauty of fruit and firm character, making it command nearly one-third more price in market for shipping purposes. It is the old stand-by, and every one feels like having some of it; but unfortunately, vines have become so much mixed that it is difficult to obtain pure, true vines hereabouts. The third variety has been grown and this year brought to market because of encomiums so lavishly awarded it by some eminent pomologists. It is undoubtedly an old sort, that once stood high in Western public favor as an amateur-grower's berry.

Triomphe de Gand has had its day here, some hundreds of quarts that I saw in market not selling quite as readily or for more price than Wilson. Austin Shaker in one location this year did very well; as a general thing it is not grown. Old Hudson, Willey, Longworth's Prolific and many other once renowned sorts have disappeared, or are only in hands of a few amateurs. Burr's New Pine is a variety almost unattainable; true, many claim to have it, but—. La Constante, Emily, Green Prolific, French's Seedling and many other sorts have been obtained the past year and started by quite a large number of growers, and nearly everybody has Agriculturist, the fruit and bearing of which I fear will cause many a disappointment.

Strawberry growing is not as profitable, as a whole, through the West as in sections near Boston, New York, &c. Our cities are yet, comparatively, wanting in a class of people who buy freely of choice high-priced fruit—such persons generally owning gardens, in which sufficient for their family use are grown; but we have abundant call for low-priced fruits, and while Eastern growers realize twenty to twenty-five cents a quart, Western growers get but say from seven to nine, while the expenses of labor in cultivating, picking, &c., &c., are about equal.

Raspberries, although they set their fruit well, did not mature all. The first two or three pickings were good, but after that, fell off. The Improved Black Cap and the Kirtland, I think, are more generally planted than other sorts, both being hardy. Brinkle's Orange, although tender, stands first wherever the amateur desires a light-colored fruit. From Catawissa, and also Ohio Everbearing, some growers have been very successful by cutting away all the canes early in spring, and depending on the season's growth, and their fruiting in August and September. Hornet, Philadelphia, Naomi and many other new, or new comparatively, sorts are found in small patches, but I do not know of any extensive plantations of them. Raspberries, being more injured even than strawberries, are not as much grown, and the prices received are better, so that in localities near large cities their growing is more profitable.

Blackberries, notwithstanding we have abundance of wild ones, are a paying crop to the grower. New Rochelle is the variety generally grown, for it is large and handsome, and will sell in market even better than Dorchester, although I believe no one considers it as good. Crystal White gave some fine berries, but I fear it is partially tender. Kittatiny has been purchased by some parties this past fall, and should it prove what is represented will doubtless be largely planted in a few years.

Currants have been abundant, nearly all varieties being grown; but for market the old Red Dutch is most common. Some few have plantations of Cherry; but with good culture the Red Dutch gives a fruit of good size and flavor, and bears in profusion. The currant, however, is not a paying crop here, the price rarely going above two dollars a bushel, and oftener only two-thirds that sum. For wine or cordial for cooking uses, however, the currant is very profitable, an acre often making over two hundred gallons.

Gooseberries of nearly all the imported varieties continue to mildew except the plants are transplanted every autumn; but the old "Pale Red," "Houghton" and other similar sorts are profitable to grow, commanding about three dollars a bushel. There is one great thing, also, in growing of

gooseberries, viz., they can be gathered and sold when green, or left until fully ripe, just as the grower's time to attend to them may suit; but strawberries, raspberries, &c., must be attended to when ripe, or they are lost. The gathering of gooseberries, however, is objected to by many growers, or those who use only fingers, and hence gooseberry growing is not likely to be overdone.

Cherries were in full bloom at the time of our late spring frost, and the crop as a whole somewhat injured. Our main trouble, however, was in their rotting on the tree just as they were ripe enough to gather. The Early Purple Guigne, Rockport, Pontiac and Red Jacket, however, escaped pretty well; all other varieties of the sweet cherries, except those on *young* trees, were mostly destroyed. Many trees from which the owners expected to gather bushels did not give a single ripe, sound fruit.

Seedlings in numbers are abundant, but the list of named sorts is already so extensive that I hope no new one will be introduced unless it have some quality of superiority over any now in cultivation. Unless a change comes, or a remedy for the rot be proved, we shall have to relinquish our claim to being "one of the best cherry-growing sections."

Apples, except upon high localities and within the influence of Lake Erie, have not been plenty; but as a general thing they have been very fair and handsome, and, judging from the supply and price in our market, there has been nearly enough raised in all sections to supply all home demand at moderate prices.

I have seen quite a number of new seedlings, or so claimed, but nothing of value. For profitable market growing, the Red Astrachan, Gravenstein and Baldwin is about the extent wanted; although I doubt not localities may be found where Porter or Myer's Nonpareil, etc., would take the place of Gravenstein. Canada has sent us some smooth, clean, bright, beautiful fruit, mostly Russets, Nonpariels, etc.

Pears are more and more growing into favor of our fruit men, and this year have been very fine; although I do not think, notwithstanding all said of large-sized, handsome Western fruit, that they can be as successfully grown away

from the seacoast as upon it, or so near that more or less of the saline atmosphere reaches them. We may use salt as a manure, I have no doubt, beneficially, but you around Boston, Flushing, &c., have it in every storm of wind from the ocean. The success of varieties appears equally good here as East, and the trees grow and fruit well. Very little blight of any kind the past season. Two new seedlings, that I think favorably of, have engaged my attention this year, and I have made drawings, &c. Although the bearing trees are some sixteen or eighteen years old, and have been in bearing since about the sixth year from seed, they have never been propagated from until last season. They are early, and the fruit about the size of a large Seckel, from seed of which it is probable they sprung. The trees are of the same upright stocky habit as the Seckel, but more rapid growers. Hundreds and thousands of Dwarf Pear Trees are planted annually, but so little is known of how to prune and care for them, that ninety-five per cent. never pay the owner first cost, and die within ten years.

Peaches in earlier days were considered a sure crop on the high locations adjacent to the lake, but of late they have been subject to so many diseases, and our climate has so much changed, that they can no longer be counted as reliable more than three years out of five. All the popular varieties are grown; Hale's Early proving year after year among the most valuable, not only from its early maturing, but its large, vigorous petals when in bloom, and the natural hardiness of the tree serving to protect it from late frosts. Among yellow peaches nothing I have yet seen equals the Sturtevant for richness of flesh, being less acid than others of its class, small pit, and productive habit of tree.

Grapes are now the leading item of fruit culture in all Northern Ohio, and a man living, as I do, surrounded by hundreds of acres of vineyards that are yearly yielding sums from three to twelve hundred dollars per acre to the owners, can hardly expect to escape the infection; but so far, I believe, I am clear of any taint of the disease, at least that part of it that looks upon grape growing in any soil and location as a business likely always to produce the present and past returns.

Thus far, a large portion of the crops have yearly been packed and shipped to Eastern markets, but judging from the stir among fruit men at the East it will not be many years ere the markets of the Eastern cities will be supplied pretty largely from their own immediate sections, and our Western growers must look to the manufacture of the grape into wine for their returns. This will cut the matter down to a few varieties, and those grown on particular soils, in order to realize large returns; I say particular soils, because a test of years proves the Catawba, when grown in sandy or light gravelly soils, to have too much acid and too little sugar and alcohol to make a fine wine. Isabella is not regarded as a wine grape, although wine is made from it, but as a table grape, it, or rather the variety I call Aiken, seems to succeed quite as well on sandy or gravelly soils as on the best clays. Again, Clinton has been produced this year on sandy soil, of nearly one-fourth extra size and beautiful bunches, making, for it, a pretty good claret wine; but the must weighed only 85, and had over 10 per cent. of acid.

Something like 5000 acres of vineyard were probably in bearing this past season on the south shore and the islands of Lake Erie, and the season so good that better wine has probably been made than ever before. The principal wine grape as yet in bearing is the Catawba; but occasional small lots of Norton's Virginia and Delaware are to be found. Iona and Rogers's 15 have been pretty extensively planted the past year, and will be more so the coming spring, with a view both to table and wine purposes. Concord, of course, is planted by all; but, although Mr. Husman speaks highly of it as a wine grape in Missouri, I have never yet met with a bottle of it that could be classed higher than as a pleasant thin claret.

Norton's Virginia stands now at the head of grapes for red wine in this country; the must often weighing over 100, and its alcohol ranging from nine to eleven per cent. It colors early, but to make the best wine from it, the fruit should be permitted to hang until November. I tested a black grape the past September, the must of which weighed 88, while the sugar was 22, alcohol 11, and acid only five per cent. I think it will make a good dark wine.

Of the new grapes, so far as I have seen, few of them are of any value for wine; and when a season occurs that rot or some other disease destroys the beauty of the bunches for the table, their value to the owner will be proportionately less than a variety good both for table and wine.

Bracket's Seedling I have never seen. Can you tell me what is its character? Taste in a pear or apple may enable one to form judgment of its value, although men differ in their views of what is requisite to form first class fruit; but in grapes, as a general thing, something more than the palate must guide in judging their value. Were our people willing to take one good crop in five or more years, the balance of the time obtaining only second class fruit, as they do in the old country, then Cuyahoga and Anna would both pay to plant, for when well ripened, as they have this year, the test of the sacchrometer shows they would make a wine of very high character.

I might write in this random manner all day of grapes and other fruits, but think a moderate dose is sufficient at one time. If you or your readers wish another, it can be had for asking.

INSIDE GRAPE BORDERS.

BY J. S. HOUGHTON, PHILADELPHIA.

IN the culture of foreign Grapes, under glass, it has been thought that borders entirely inside the house promised advantages over outside borders, or borders partly outside, which rendered such borders worthy of trial, especially in the case of late grapes. Inside borders are of course entirely protected against the influence of storms, at all times, and the plants may be started or checked at will. If late grapes could be successfully grown in them, the fruit might be kept for many weeks on the vines after the natural period of ripening, without danger of being injured by the autumnal rains, and the crop would then be quite as valuable as early forced grapes. Very extensive and costly experiments having been made

with inside borders in the neighborhood of Philadelphia, I have thought it might be useful to record the result of these trials, for the benefit of grape growers generally.

The plain fact, then, is, so far as I have seen, that the Inside Border here is a lamentable and singular failure.

Reasoning from all that we know of the conditions necessary for the growth of the vine, and from its success in pots, no one could anticipate such complete and uniform failure as has attended its culture here in inside borders. The vine may be grown with a great show of success for one or two years, in such borders, by the aid of plenty of water and a high temperature, but as soon as they begin to fruit they decline and die most mysteriously. In five or six large grape houses within my knowledge, this has been the certain result. These houses were built by Thomas Drake, Lewis Tawes and Peter Keyser, Esqrs., of Germantown, William Bright, and myself.

In all these houses the floor under the borders was made of solid concrete, or bricks, impervious to water, and in several instances the borders were separated from the side walls by air chambers. In some of them air was conducted under the borders by flues, and two or three of them were entirely separated from the floor by four-inch brick work, with the idea of giving them some bottom heat. The suspended and ærated borders proving failures, the air conductors were in several instances removed from the bottom of the pits, and the borders were placed directly upon the concrete (good drainage being provided), but with no better success. The most ample provision was made for watering the borders, by means of large rain-water tanks, force pumps, evaporating troughs, and concrete paths kept constantly wet in hot weather.

In borders of good size the trouble and expense of watering inside borders is not the chief objection. The watering is a formidable job, even with the aid of a large tank and force pump, but this could be endured if the borders would answer the purpose. The question of watering, however, is a very perplexing one. How to water, when to water, how much water should be used, and of what temperature,—these are

questions not yet satisfactorily answered, although we have tried the extra wet method, the partially dry method, water at 55°, and water at all temperatures up to 140°. But nothing that can be done, by the most skilful, will make the vines grow in such borders after the second or third year, especially after fruiting. They appear to sicken and die, and refuse to be comforted or relieved by any appliances of water or manures that have yet been tried. The roots, in almost all instances, become black and cankered, and no new or healthy fibres can be discovered.

This disease of the roots is not occasioned, in all instances, by over-rich borders, or by over-manuring, for some of our experimenters have gone to the extreme in making poor borders (for late grapes of strong growth), composed of rotten rock, sand, plain loam, lime rubbish, &c., with only a little wood ashes and pure bone dust. But no kind or quality of border appears to answer a good purpose when entirely inside the house, and separated from the earth by a concrete bottom.

Now what is the cause of this general failure of inside borders? The vine will thrive for many years, if not over-cropped, in a common pot; then why not in an inside border, which is in fact only a large pot? I have contended for six years that an inside border *must* answer, but I am compelled to give it up now. I have tried the inside border in all shapes, and with the most skilful management, but it will not do. It looks reasonable that a vine should do better with its roots all inside the house, perfectly under control, than with part of the roots outside, exposed to very different degrees of temperature, moisture, &c. But the facts condemn the reasoning.

The causes of this general failure of inside borders I cannot understand. The effect of the constant watering which such borders require may be injurious. It may make the borders "sour," as gardeners say. I have also thought that separating the borders from the earth by means of concrete, prevented the soil from receiving some natural moisture by capillary attraction; and perhaps, also, some magnetic or electric influence from the body of the earth which may be

necessary to the life of the vine. The size of the borders has evidently no influence in producing the failures, as they are never filled with roots, and therefore are not exhausted.

I have been told that inside borders have been much employed about New York city, but with what results I have not learned. I should be much pleased to see reports of the working of such borders there or elsewhere.

GRAPES AND GRAPE GROWING IN IOWA.

BY JUDGE JOHN KING, DUBUQUE

THE last season was not at all favorable for grape culture in Iowa. June and July were exceedingly wet months.

The frequent heavy rains were generally accompanied with unusual cool weather; hence some kinds of grapes were badly mildewed. The affected varieties with me were the Catawba and Diana (badly), Allen's Hybrid, Delaware and Concord (slightly). Those mostly free from disease were the Adirondac, Creveling, Hartford Prolific, Logan, Isabella, Perkins (a poor grape, however); Rogers's Hybrids, Nos. 2, 4, 19 and 33, black; No. 9, red; No. 1, white; No. 33, large berries, bunches very compact, a splendid grape. No. 9 is probably the best of all Rogers's, because it produces good wine. Cuyahoga (white), rather late, but ripened perfectly; sweet and delicious. I had some large Herbemont vines against a stone wall, which produced fine ripe bunches. But it is too late for this latitude, unless the location is favorable.

We lay our vines down in November, covering with straw. They are lifted about the 20th of April, which almost invariably ensures a crop. Iowa is destined to be a grape-growing State. The winters are regularly cold, the summers warm, and the falls all that could be desired for maturing that desirable and delicious fruit. Messrs. Allen and Rogers, in the production of their hybrid grapes, have conferred a public benefit.

Mr. Jacob Moore of Rochester, N. Y., has also produced some fine hybrids, for the dissemination of which he will

deserve well of his country. Mr. Geo. W. Campbell of Delaware, Ohio, a skilful hybridist, has been experimenting for a number of years, and will in all probability ere long send forth something valuable in the shape of new grapes.

The writer has been experimenting in like manner, but has produced nothing worthy of notice. More recently, however, he hybridized an early native with the following named foreign grapes:—Black Hamburg, Zinfindal, Golden and Purple Chasselas, Chasselas of Fontainbleau, White Syrian, and others.

When “the grape for the million” shall have been produced, it will most likely be a “mongrel”—an *early, hardy, wine* grape.

DESCRIPTIONS OF SELECT PEARS.

BY THE EDITOR.

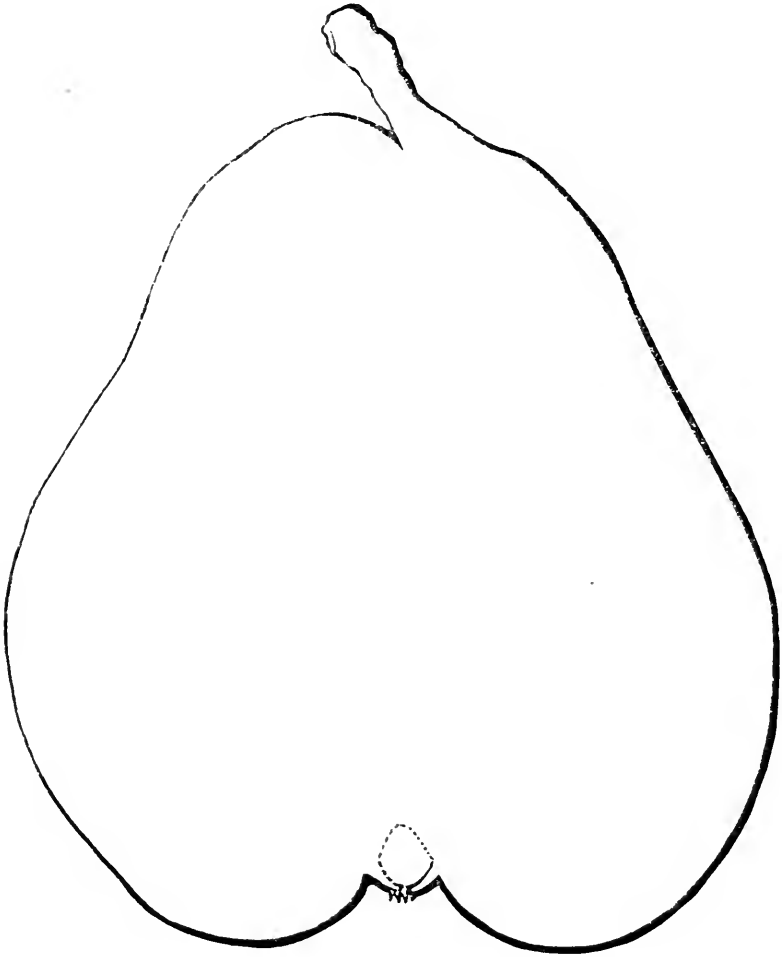
WE have alluded on several occasions to several new Seedling Pears which have been exhibited before the Massachusetts Horticultural Society the last year, and we now have the pleasure of describing and figuring two of the most prominent of them, both of which we deem acquisitions to our list of pears.

239. GOODALE.

In the autumn of 1863, B. F. Nourse, Esq., of Boston, sent us several specimens of a new pear which he stated originated in Maine, from the seeds of the well-known McLaughlin. The pears were of good size, greenish color, and generally of handsome appearance, but upon tasting them they did not come up to the excellence we had anticipated from Mr. Nourse's account of the pear. The specimens were either too ripe, or had been gathered too late, and we awaited another year before deciding upon its true character.

The past autumn Mr. S. L. Goodale, of Saco, Me., sent several specimens to the Chairman of the Fruit Committee of the Massachusetts Horticultural Society for examination

and trial, and through the kindness of Mr. Hyde we had another opportunity to test this new pear. This time the pears were gathered in good season, about the 20th of September, and were yet quite hard and green. These we laid away to ripen, and about the middle of November they had arrived at full maturity, attaining a greenish yellow hue,



2. GOODALE.

with a slight blush on the sunny side—just in perfection—thus showing how early even some of the November pears should be gathered to have them in the best condition. We found the Goodale a pear of great excellence, and comparing favorably with the few varieties then in eating. It was, we learn, raised by Mr. Goodale a few years since.

Of the habits and character of the tree we have no knowledge, and give our description as follows :

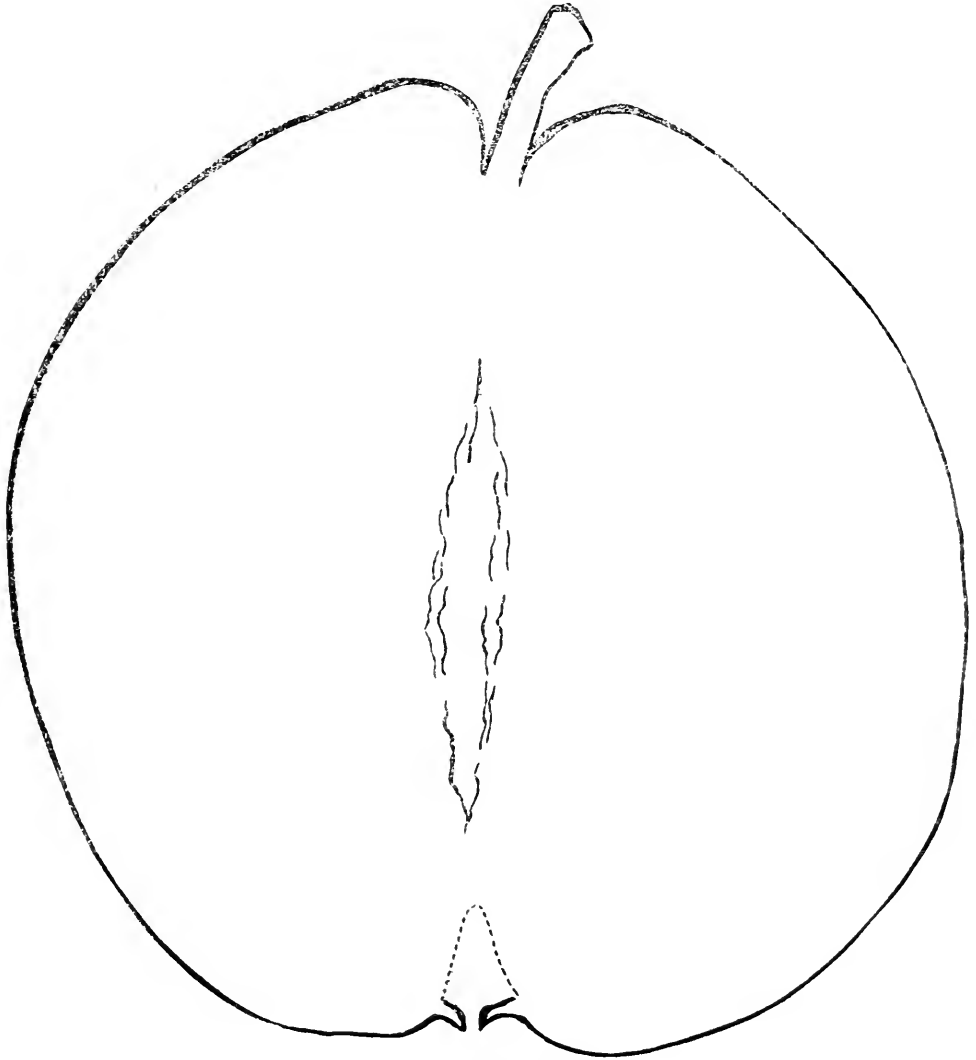
Size large, about three and three-quarters inches long, and three and a half in diameter : Form, oblong obovate, large at the base, slightly contracted in the middle, and very obtuse at the stem : Skin, fair, smooth, green, changing to a yellowish green at maturity, thickly dotted or traced with russet about the crown, broadly tinged with pale red in the sun, and indistinctly speckled with russet dots : Stem, short, less than half an inch long, stout, and inserted without any cavity, with a slight projection on one side : Eye small, closed, and set in a small, contracted, puckered basin ; segments of the calyx short, sharp, stiff, projecting : Flesh, yellowish white, coarse, melting, slightly buttery, with a vinous, refreshing juice, and pleasant flavor : Core, medium size : Seeds, medium size, rounded, shortly-pointed, plump. Ripe in November.

240. PRESIDENT.

We have already alluded to the seedling pears raised by Dr. S. A. Shurtleff, one of the very earliest correspondents of this Magazine, who, since his retirement to his garden in Brookline, has devoted his leisure time to the growth of seedling pears, having raised and named more than twenty-five sorts of various merit, some of them excellent, and many of them very good, without possessing, perhaps, anything new or distinct in flavor. Some six or eight of them are very large, showy, and apparently desirable pears, which will, we think, be useful additions to our collections. We need to see more of them before deciding upon their real merits, but we feel no hesitation in figuring and describing the President (FIG. 3), as one of the best of the Dr.'s seedlings. Our specimen weighed one pound two ounces, and was a twin pear, growing from the end of a single spur.

Size large, four inches long and about four in diameter : Form, roundish, slightly obovate, with an irregular or uneven surface, somewhat ridged or angular, largest in the middle, narrowing towards each end : Skin, slightly rough, dull pale green, very broadly tinged with pale red in the

sun, thickly russeted at the base of the stem and around the crown, and rather evenly and thickly overspread with tracings of russet and very large conspicuous russet dots: Stem, short, half an inch long, quite stout, curved, and obliquely inserted in a small, compressed, moderately-deep cavity: Eye, medium



3. PRESIDENT.

size, open, and slightly depressed in a small, not very deep basin; segments of the calyx, short, stiff, projecting inwards: Flesh, yellowish white, coarse, slightly buttery, melting, and full of a refreshing, slightly vinous, and pleasantly perfumed juice: Core, large, long, slightly gritty: Seeds, medium size, shortly-pointed, full light brown. Ripe in November.

General Notices.

CALLA PALUSTRIS.—"Bog Plants," in the index of your number for July 2d, reminded me that more beauty than any native bog plant affords may be had by planting in boggy places the small trailing Arad, *Calla palustris*, which has pretty little spathes of the color of those of its relative, the Ethiopian lily. It is thoroughly hardy, and, though often grown in water, likes a moist bog much better. In a bog or muddy place, shaded by trees to some extent, it will grow larger in flower and leaf, though it is quite at home, fully exposed. I have a small bog nearly covered with the dwarf, dark green leaves of this plant, and as one of its white flowers crops up here and there along each rhizome, and just raises itself, fully expanded, above the leaves, the effect is thoroughly pleasing. Those having natural bogs, &c., would find it a very interesting plant to introduce to them.—(*Gard. Chron.*)

SALWAY PEACH.—I can confirm all that Mr. Bailey has said in favor of this peach. In addition to the good qualities which he has ascribed to it, it will hang upon the tree a long time after it is fit for table, a point of importance, as, by protecting the trees with glass, I believe the fruit might be kept till the end of November. At this time of the year nothing can surpass the beauty of the Salway on the desert table. The fruit of this variety shown by Mr. Turner of Slough, at the International Exhibition in Dublin on October 3, to which was awarded a medal, was the most beautiful I have ever seen in the way of peaches, and wherever the latter are grown the Salway should be the chief autumn variety.—(*Gard. Chron.*)

TAGETES SIGNATA PUMILA.—I strongly recommended this as a valuable plant for garden decoration. I stated that one of the best things which had come under my notice was *Tagetes pumila*. Its neat habit, serrated foliage, profusion of pretty orange-colored flowers, and long duration, stamp it as one of the most useful of bedding plants. I also at the same time recommended it as a substitute for the *Calceolaria*, in places where the latter cannot be depended upon. Mr. Robinson echoes what I had previously stated, and points to Chatsworth, where it can now be seen in great beauty. I need say no more respecting it—its being extensively used at Chatsworth speaks for itself. I am sorry to say that this season a tall-growing variety (*tenuifolia*) has been sent me instead of it, a circumstance which has quite spoiled the effect of my beds.—(*Gard. Chron.*)

LOBELIA CARDINALIS.—This fine old plant ought surely to have a place in more flower gardens than it has at the present day. When grown in good rich soil and copiously watered, it is a very effective bedding plant.—(*Gard. Chron.*)

It is one of our most showy indigenous plants, quite hardy, and should be found in every garden. **ED.**

Horticultural Operations

FOR FEBRUARY.

FRUIT DEPARTMENT.

The weather of January, though on the average not low, has been accompanied with three or four very cold days,—the coldest but one since December, 1835, when the thermometer was 18° below zero. On the morning of the 8th our thermometer was 16° below. The 15th was also cold, with the mercury at zero. Such severe weather has retarded early forced houses, and, except where there is an abundance of heat, given a slight check to the growth of vines and plants. It is now milder, and a few days of such weather will be highly beneficial.

VINES in the earliest houses, now beginning to ripen, or, more forward still, so as to be nearly ready for cutting, should be kept at a good temperature, and, if well advanced towards maturing, dryer than heretofore, but, if swelling rapidly, continue in supplying plenty of moisture, and air on fine days. If the houses are so late as just to be in bloom, it will be well to artificially fertilize such sorts as Cannon Hall, Muscat of Alexandria, and some other shy setters. Choose the middle of a dry day for the operation. Follow up the stopping of superfluous laterals and shoots. Vines in the grapery and greenhouse will begin to swell this month. As soon as this is perceived, commence syringing the vines every day in good weather, and take every care that the shoots break evenly and strong, beginning with a moderate temperature and increasing it gradually as the growth advances.

ORCHARD HOUSES should be aired freely in good weather, maintaining as even a temperature as possible. Where there is the means of heating the house, preparations should be made for starting the trees into growth, removing the covering from the pots, and keeping out all frost.

STRAWBERRIES in pots may be brought into the house and placed on a warm and airy shelf near the glass.

PINES. Those who are growing Pines should now shift the plants into larger pots, using a coarse tufty loam and very old manure; drain well.

FRUIT TREES of all kinds may now be brought into the house.

SCIONS may now be cut.

PRUNING may be continued in all good weather.

ROOT GRAFTING may be done at this season.

FLOWER DEPARTMENT.

After the cold weather of last month the houses should be kept rather cool to prevent a forced growth caused by excessive fires. Work will now accumulate where there are large collections of plants. Continue propagation at this season, and repot such plants as require it. Increase the temperature as soon as the days get longer and the sun higher.

CAMELLIAS will now be in full perfection, and where the houses have been kept warm will begin to grow. When this is the case, syringe freely

and water more liberally. Head in ill-shaped plants before they break into new wood.

AZALEAS will be in bloom in warm houses, and should be more abundantly watered. Those in cooler situations must be carefully watered, giving them just enough to keep the wood plump. Tie the plants into shape, if not already done.

PELARGONIUMS will now require more care, as it is important that they should have a vigorous root action without much leaf growth. Give an abundance of air with a temperature of 45° at night, otherwise they will be drawn up. Tie out the shoots and use every exertion to secure large, vigorous, bushy specimens. All the repotting should be finished this month.

ACHIMENES AND GLOXINIAS should now be potted in a light soil of mostly decayed leaves, loam and sand.

CALADIUMS may be divided and potted, potting them in light sandy soil and placing them in a good warm place. Water sparingly.

FERNS should be divided and repotted.

AMARYLLISES, now beginning to show their flower buds, should be liberally watered.

MONTHLY CARNATIONS growing vigorously may be shifted into larger pots.

CINERARIAS AND CALCEOLARIAS may be shifted, if not already done. Keep on an airy shelf near the glass.

PANSIES. Repot such as it is intended to bloom well in May and June.

FUCHSIAS should be shaken quite out of the old soil and repotted. Young cuttings should be pinched in to make bushy specimens.

DAHLIAS may be potted now for early blooming, or for procuring cuttings for raising young stock.

CHINESE PRIMULAS, in full bloom, should have an occasional watering with manure water.

HYACINTHS, TULIPS and other Dutch bulbs, potted in November, should now be brought into the house for flowering.

SEEDS of many annuals for early flowering may be planted in boxes and placed on a shelf near the glass.

CYCLAMENS will need more water as they come into flower.

VEGETABLE DEPARTMENT.

The time has already arrived for movements in the production of a good supply of vegetables, and a good hotbed should be got under way as soon as possible. When prepared and ready for use sow

TOMATOES, of the various kinds;

LETTUCES and Radishes;

CUCUMBERS, in pots, three or four seeds in each;

MELONS if they are wanted in good season;

CABBAGES, Cauliflowers, Broccoli, &c.

With a three-light frame and a small quantity of manure all these vegetables may be had with very little trouble early in the season.

PEARS IN MASSACHUSETTS.

THE season of 1865 was not, on the whole, so favorable for the growth of fruits in general as some previous years. Yet the pear appears to have done very well, and perhaps among the larger fruits gave more satisfaction than any other. In the spring it was thought the crop would be almost a failure; the bloom was abundant, but in a week or two afterwards the ground was strewn with the fallen fruit, so that it was supposed there would be little left to mature; but, with the favorable weather of June, the fruit that still remained swelled kindly, and in a few more weeks the trees presented a much more promising appearance than the most sanguine or observing cultivator anticipated.

All was progressing well when the drought of July set in; this soon checked the growth of the trees and the growth of the fruit, and except in favorable localities, or where water could be freely given to the trees, by the month of August they had attained such a condition that the crop could not possibly be as large and fine as the appearances had indicated. In some gardens which we saw, we think the fruit grew but little, if any, after the middle of August; and in September, the leaves had fallen from the trees, and the fruit still adhered, partially shrivelled, to the leafless branches. These, of course, were extreme cases. In our own grounds, which do not ordinarily suffer from drought, the trees maintained their foliage and matured their crop; but it was much inferior in size and general excellence to previous years. Only where water was freely given once a week, in August and September, did the pears attain their full dimensions and beauty.

But among the numerous cultivators in Massachusetts, and particularly in the neighborhood of Boston, there are so many amateurs who delight in good culture and spare no pains to ensure a good crop, that there was no real scarcity of excellent pears, and the Annual Exhibition of the Massachusetts Horti-

cultural Society, in September, developed the fact that the dryest year and the most adverse circumstances cannot greatly diminish the supply. It is, we believe, admitted by all who witnessed the exhibition that the pears were never surpassed, and some sorts were brought out in a perfection never before attained. The Duchess, as a general rule, was a partial failure, yet specimens were exhibited weighing 16 and 18 up to 26 ounces each. Twelve Bartletts weighed 10 pounds; Doyenné du Comice, weighing 11 to 12 ounces each; Sheldon nearly or quite as heavy, and everywhere good; if there was any one pear which could not be called a failure, it was the Sheldon; Urbaniste was almost a failure; Beurré d'Anjou was not so abundant, but still good. Beurré Diel suffered, as it always does in dry seasons; yet we saw some specimens weighing 20 ounces each. De Tongres was fine; and that much-abused pear, the Beurré Clairgeau, was not only large and beautiful, but in quality superior to any we had previously tasted, showing that a warm season brings out its good qualities.

To the close observer, such exceptional years are of much value: they teach us that we should not, at least as amateur cultivators, rely on a few kinds. Those who had half a dozen trees of the Urbaniste, were deprived of this delicious pear at a season when it is so much needed; but those who had the Doyenné du Comice did not mind the loss. Lawrence was by no means abundant; yet those who had Dana's Hovey forgot almost the existence of that good pear. Louise Bonne of Jersey, that popular and universally appreciated pear, always heretofore to be depended upon, was anything but abundant; yet the Swan's Orange did not fail to produce its moderate and uniform crop of superb specimens.

In our very large collection of pears, embracing over 800 varieties and more than 3000 trees, one of each only of the newest kinds, we gathered in 1862 one hundred and fifty-one varieties of a bushel or more of each. In 1863, only seventy-six varieties of a bushel or more each were taken from the same trees; and in 1864, one hundred and five varieties of a bushel or more each. Our account for 1865 is not yet made up, but we believe it to be some one hundred or more varie-

ties. Thus showing, that the season of 1862 was favorable for 150, 1863 only 76, and 1864 105 varieties. These are the exact figures, and the whole produce of the three years was about 3000 bushels of marketable pears, and a great quantity unfit for market, as we find it almost impossible to properly thin out so large a number.

From this we have the positive fact that the surety of a good crop lies in having a good number of varieties, so that when one fails, another may supply its place. This, we think, has not been sufficiently considered by the six or twelve variety-men, who get up lists of the six or twelve best pears. We have found that when the twelve-variety cultivators had no pears, we had an abundance, perhaps not so large and showy, but far better pears.

These few remarks upon the pear crop of 1865, lead us to a notice of the review of the season and its results, as given in the Report of the Chairman of the Fruit Committee of the Massachusetts Horticultural Society, which we alluded to in our last number, and from which we quoted Mr. Hyde's remarks on Grapes. We now invite attention to those on the Pear:—

We turn from the apple to the pear, a fruit that has been growing in favor from year to year. It has perhaps fewer enemies than any other fruit, while it gives very remunerative returns for the care bestowed upon it, and the capital invested. The apple orchards, near the large cities, are fast giving way to pear trees, and soon we may reasonably expect to see the market well supplied with this fruit. It is true that the pear orchards receive better attention than we have been accustomed to bestow on the apple, and they must have it, or no good results will be obtained. Messrs. Hovey & Co. have taken the lead, as usual, in this fruit, especially at the Annual Exhibition, where they displayed some one hundred and fifty varieties. The next largest collection was that of M. P. Wilder, which made a fine appearance. Next in order was H. Vandine, who is a constant contributor. The pear crop was fine, and the tables at the annual exhibition presented a very beautiful appearance; indeed, it was remarked by several

good judges that they never saw a better table of pears than that on which the prize fruit was displayed.

Magnificent specimens were shown of Doyenné du Comice, Sheldon, Beurré Superfin, Seckel, Duchesse d'Angouleme, Beurré d'Anjou, and others, showing to what degree of perfection this fruit may be grown when great care is taken in its cultivation. Among the new pears that were tested, was the "Painter Seedling," from West Haven, Ct., brought to us by W. H. H. Campbell, Esq., of Norwich. It is, in outline and general appearance, very much like the Heathcote, but larger. The largest specimen weighed ten ounces, and was eleven and a half inches in circumference. It is fine grain, melting, pleasant, subacid flavor. It is a pear well worthy of a further trial.

We received from S. L. Goodale, Esq., Saco, Me., some very large and fine specimens of the Goodale pear, a seedling of which we spoke last year, raised from the McLaughlin. The fruit this year was far superior in quality to that of last year, it having been picked in better season. It resembles in shape the Andrews, though more blunt at the stem end; it becomes yellow at maturity, with a bright red cheek on the sunny side; quality good, nearly equal to Beurré d'Anjou, and we think it, on the whole, one of the most promising new pears that has been brought to our notice. It is undoubtedly a very hardy tree, being a native of a State so far towards sunrise.

Dr. Shurtleff sent in several of his seedlings this year. The Golden Bell, Admiral Farragut, John Cotton, President, and others. The President is a new and very good one, large size and very handsome. We think it is well worthy a further trial. The Admiral is a large pear, of only fair quality, but may be desirable on account of its large size. The Golden Bell is a decidedly poor pear. We still believe that some of the Doctor's pears will find their way into general cultivation, and be valuable both for home use and market.

The Whieldon pear has been more carefully tested by us, the past season, than ever before, and we do not regard it as of any particular value for general cultivation. It is coarse and gritty, lacks character, and is not so good as many other pears of the same season.

The Mount Vernon has been shown several times this season, and has appeared very well. It is a good pear, with a very peculiar, and, to most people, agreeable flavor. Though not of the very highest quality, still, we think it worthy to be placed on the list of pears, at least, for amateurs, if not for general cultivation. It will prove like the Duchesse, when over-ripe, to show slight signs of decay about the core, but this, it is believed, will not prove a serious defect. There are good reasons to hope that it will improve on more general cultivation.

We were favored with specimens of a seedling from George Hyde, Newton, which was described in last year's report: size rather above medium, yellow, with red cheek, somewhat spotted, stout stem, fine grain, melting, pleasant flavor; ripe this year November 18, but keeps into, and sometimes through, the winter. Good.

A new pear has been exhibited for the last two or three years, by A. J. Dean, which promises well. It resembles the Washington in the dots, marking and flavor, but more the Louise Bonne de Jersey in shape and size; and is superior to both in quality. Ripe last of September.

We have repeatedly tested the Augustus Dana, and pronounce it a pear of very high character, but with a thick, rough skin.

No pear among the comparatively new ones has pleased us more than Dana's Hovey, to which, it will be seen, we have awarded a prize of sixty dollars, "for the best new seedling pear after a trial of five years." This compliment is well deserved, though it comes too late to benefit him in the sale of his stock. No one has been more successful than he, in raising new pears, and it fully proves that good results will surely follow the sowing of the seed of the best pears. We doubt if any pomologist or fruit grower ever gave to the world so many really fine pears as Mr. Dana. These facts are rather damaging to the Van Mons theory, of going back to first principles, and starting with the small wild button pear, and working up through successive generations. We do not now remember a pear, raised by Van Mons, equal to Dana's Hovey and others, raised by Mr. Dana. Many of our best pears are

chance seedlings, and we feel that we risk nothing when we affirm, that any person who will pursue the course adopted by Mr. Dana, that is, select seed from the very best varieties grown in close proximity to other good varieties, then select the best specimens of that particular sort, then the best seeds from those specimens, he will be quite sure to get some valuable new pears.

We were invited to visit the well-known orchard of Frederick Clapp, of Dorchester, to see the Clapp's Favorite pear, a variety of recent introduction, but of deservedly high popularity. We were highly pleased with the appearance of both trees and fruit. The trees were strong and vigorous, and loaded with large fair fruit, though they were but four or five years from the graft. The fruit was highly colored and very handsome, especially where exposed to the sun. We have never seen trees of that age that presented a finer appearance than those we saw of this variety at Mr. Clapp's place. We took away several specimens, some of which we kept for several days, and though they were not fully grown when picked, they ripened up finely, and were certainly superior in quality to the well-known and popular Bartlett. We are satisfied that this fruit should be picked quite early to fully secure its good qualities. We have been heretofore somewhat afraid that it would decay too quickly to be valuable. We cannot, of course, expect a summer or early fall pear to keep as well as a pear that ripens later, but we feel satisfied that if the fruit of this variety is picked in season, it will keep as well as can reasonably be expected of any fruit ripening early in September.

For the two past seasons, the fruit of Clapp's Favorite has been past before the Annual Exhibition of the Horticultural Society. The growth of the trees of this variety is very fine, and all that can be desired. We feel that it is well worthy a high place on the list of pears, coming as it does before the Bartlett.

GRAPE CULTURE AND PREVENTION OF ROT.

BY DR. H. SCHRODER, BLOOMINGTON, ILL.

WE are pleased to present our readers, and especially grape growers, with the following essay, by Dr. H. Schroder, a well-known grape cultivator of Illinois. Whether his system will prove a perfect prevention of the most troublesome rot, remains to be perceived. It is at least worthy of trial. Ed.

Revolution everywhere! So in grape culture. Much is said and written in regard to the most dreadful disease, the grape rot; underdraining, ditching, subsoiling from eighteen inches to three feet, long and short trimming, sulphur, lime, and sulphate of lime, most everything is tried to prevent or to cure the grape rot, but all failed more or less. New varieties it was hoped would not be liable to the rot, but this also has failed in most of the cases. The vine that rot the most, is surely the celebrated Catawba,—and let me here tell my friend that wherever the Catawba will ripen, and in its perfect state free from disease, it is a splendid grape, spicy, showy, aromatic and vinous, and makes a superior wine; a wine that speaks to our heart, as it is said that it has such a fine effect on our heart organs. Pity that the Catawba, in consequence of the awful rot, became so much discarded, and I do not blame its antagonists among vineyardists, as they had suffered so much under its culture.

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

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

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

REMEDY.—After preparing your land for the vineyards, plant the same with good strong layers or first-rate cutting plants from 8 to 12 feet apart in a square, in the usual manner. When your vines come into bearing the first big crop, say the third or fourth year after planting, take one strong cane of the bearing vine raised for this purpose, close to the root of the vine, make a little ditch with a hoe or spade from 4 to 6 inches deep in the row up to the centre between your two bearing vines, let this cane stick about one foot out of the ground, and, after covering your ditch, cut it off; as I said one foot above the ground, this I will call the *first reverse*. Let from this grow three unchecked vines; two of them are for fruiting the next year, and can be cut long to give a good crop of fruit. The third cane is for the *second reverse*.

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

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

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

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

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

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

POMOLOGICAL GOSSIP.

FALL AND WINTER PEARS.—The following brief remarks of our correspondent Dr. J. S. Houghton of Philadelphia, in regard to autumn and winter pears, will, we doubt not, interest our pear cultivators:—

“I send you enclosed, an article from the Gardeners’ Chronicle on late pears. I presume you may have seen it, but it may have escaped your attention. I should be pleased to see your comments in the Magazine, on the late English varieties, in comparison with the late varieties which have been tested in America.

I have just tasted the Beurré de Caen, or Caen de France: are they synonymous? It is a handsome pear, of good size, and a pretty good keeper, with a tendency to rot at the core: quality good, vinous, fragrant, but not first rate: not quite sweet enough, or delicately aromatic.

In the article from the Chronicle the Winter Nelis is strangely omitted.

I have one tree of the Bezi Mai, the last pear named in the Chronicle. Mr. Rivers has said that it is worthless as a dessert fruit.—*Yours, J. S. Houghton.*

Pears.—The months of October, November and December are, *par excellence*, the pear season. The strawberry, cherry, apricot, peach, nectarine and plum are unrivalled in their respective periods; but when peaches belong to time past, when the last Golden Drop has been gathered from the wall, the hours of light lessened, and the dinner can no longer be finished without the lamp, then do we acknowledge the supremacy of the pear. Foremost among late varieties, are Marie Louise, peerless and unrivalled, excelling all others in beauty and goodness; Louise Bonne of Jersey, Gansel’s Bergamot, whose good qualities cannot be adequately described; Beurré Hardy, Conseiller de la Cour, handsome and well flavored, described by that enthusiastic raiser of pears, Van Mons, as ‘la meilleure poire existante’; Beurré de Caen, a robust cousin of the venerable Brown Beurré, with all the good qualities of that variety, added to a good constitution;

Marie Louise d'Uccle, hardy, with a clear title to nobility; Doyenné du Comice, handsome, well developed, and highly colored, with remarkable sweetness; Beurré Bachelier, noble in size, and in all respects good; Huyshe's Victoria and Prince of Wales, worthy descendants of illustrious sires; Josephine de Malines, a good Christmas pear—as are also Bergamot d'Esperen, rough but excellent at heart; Madame Millet, sparkling and delicate; and lastly, with the green leaves of a returning summer, Bezi Mai, a very tough hero, indeed, fighting a good fight unto the last. These candidates for honors are, as will be seen, not new; on the contrary, some of them are very old. So great an advance has however been made of late years that good pears may now be had during eight months in the year. An extensive field is nevertheless yet open to those who are cunning in the mysteries of raising new fruits, and the plan of potting the trees designed for seed, greatly facilitates the work. By careful and intelligent crossing we may yet expect the most unhoped-for results."—*Gard. Chron.*, Dec. 9, 1865.

The Bezi de Caen of the English gardens we do not know, but we apprehend from the remark that it is a "robust cousin of the venerable Brown Beurré," that it may be the same as our Caen de France, which is a russety brown pear, keeping however up to the very moment we are writing, (Feb. 3,) with fine specimens before us. The merits of this variety seem to have been overlooked; it was received from Van Mons in 1835, by Messrs. Manning, Dearborn and Kenrick, and described and figured in our Magazine for 1846, (XII., p. 148.) On reference to the volume we find that we then stated that in general appearance it resembled the Gray Doyenné, but with a rougher russet skin; and that it was in perfection in January, but would keep till the end of February; all of which, after a period of TWENTY YEARS, we more than confirm, and pronounce it one of our best winter pears.

The Bezi Mai we have not fruited, but our impression has been that it would not become melting enough, which appears to be confirmed by Mr. Rivers. It belongs to the class of Fortuné, De Sorlus, Belle Williams, and many others, which some years are soft enough to eat, but usually need the aid

of a good hot oven, or kettle of boiling water, to make them eatable.

Marie Louise d'Uccle we described in our last volume, and we think very highly of it.

Bergamot d'Esperin could not be better described, and the writer must have known it well. With half a dozen specimens on our table while we write, we can confirm all he says. Rough it is, and the only objection to it is, that after taking off the hide, there is too little left. Still, it keeps well, and makes up, by its two or three small slices, a variety, which is always desirable.

Huyshe's Victoria and Prince of Wales we have not seen.

Madame Millet is good, but too small.

To American cultivators the list in the Gardeners' Chronicle appears almost a pomological curiosity. What should we do in the months of October, November and December, which are, *par excellence*, the pear season, without Swan's Orange, Sheldon, Moore's, Andrews, Edmonds, Beurré Bosc, Paradise of Autumn, Pratt, Beurré Superfin, Seckel, Abbott, Heathcot, Duchesse d'Orleans, Urbaniste, De Tongres, Augustus Dana, Beurré d'Anjou, Howell, Hovey (Dana's), Lawrence, Grand Soliel, and many others, every one of which is fully equal to those named in the Chronicle, and leaving out Marie Louise, Doyenné du Comice, Beurré Hardy and Gansel's Bergamot, are all far superior to any of them. Mr. Rivers has done something to enlighten English cultivators about American fruits by the importation of a few of the best, but they are still almost as ignorant of the real state of pomology in America as the Fejee Islanders are of the state of civilization in Europe.

PROF. NYCE'S FRUIT HOUSE.

BY PROF. NYCE, CLEVELAND, OHIO.

ON reading your Magazine of January, 1866, I regret to find, from a correspondent of East Pennsylvania, the following remarks: "There appears to be a systematic puffing of the patent house invented by Mr. Nyce."

I do not now discuss the merits of the views of the writer referred to, but my rule is never to let my ideas or notions stand in the way of well-attested facts, whatever they may be. The reports of this house published by horticultural associations have in all cases been their voluntary action, on the simple presentation of specimens of fruit before them. The publications of the Ohio Pomological and Ohio State Board of Agriculture have been made at the cost of the State, and in most cases without my knowledge.

I have never requested any one to write a line, or paid any one a dime for writing in its favor, and until the recent pamphlets and circulars issued, have never published anything on my own account. You will, I am sure, be happy to permit this correction of the statement made, not so much because of its injustice to myself, as to those prominent fruit-growing associations of our country, whose characters are quite too high to deserve the imputations attributed to them.

VINEYARD CULTURE OF THE GRAPE.

BY DR. J. P. DAKE, SALEM, OHIO.

IN the January number of the Magazine, under the above heading, some instructions are given, among other things, for the selection of sites and preparation of ground for vineyards.

I wish simply to say in reply, that along the south shore of Lake Erie, where we are planting vines by the hundred acres, and where the largest profits attainable from grape growing, this side of California, are realized, we do not select "south-east" sides of hills in preference to the other sides, nor do we trench the soil to the depth of "eighteen inches," and we by no means put "bone manure" below for the roots of our vines to revel in.

So far from practicing such measures, we regard them as not only useless but injurious; particularly the deep trenching and high manuring. We want *fruit*, and not a wilderness of grape wood—we want healthy, long-lived, and not over-stimulated, plethoric and diseased vines.

Our vineyards do full as well on the north and west as on the south and east hillsides; in fact, near the lake they do better on the northern slopes always.

Our best vineyards and healthiest vines are on our purest clay soils, ploughed deep enough for corn, and well under-drained. We use no manure, except where there is a deficiency of lime, and then the addition of a little plaster or slacked lime answers our purpose fully.

We regard the old-fashioned ideas of soils, sites, trenching, and manuring with bones and animal carcasses, as really detrimental to grape growing in this country. People are frightened by such requirements from planting vineyards. Come out west a little, and let us show you how we have exploded such obsolete notions.

DESCRIPTIONS OF SELECT PEARS.

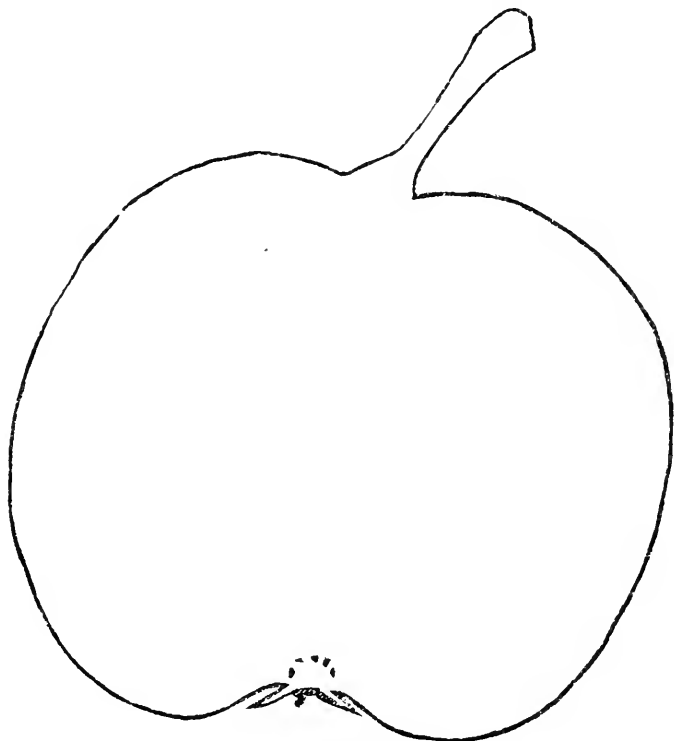
BY THE EDITOR.

By one of those mishaps which sometimes occur,—fortunately the only one of the kind in our thirty-one volumes,—the cut of the Beurré de Lannoy pear was substituted by the printer for the Gansel's Late Bergamot, the description of which appeared in the December number. Three varieties were intended to comprise the article, but as there was only room for two, the third was omitted, and this was the Beurré de Lannoy. In the hurry of getting out the December number, with index, &c., the error escaped our attention. We now reprint the description and add the correct engraving of the Gansel's Late Bergamot. We also give the description of the Beurré de Lannoy, and also the engraving which was substituted for the Gansel's Late Bergamot.

237. GANSEL'S LATE BERGAMOT.

This pear (FIG. 4) is one of the numerous seedlings of Mr. Williams of Pitmaston, England, some of whose pears we have already noticed, (Vol. XXXI., p. 44.) It has now been in our collection some years, and first bore with us a year or

more ago, but the specimens were few, and did not ripen up well, so that we did not form a very high opinion of its merits. It is slow in coming into bearing, our trees being very large. Fortunately it has fruited in some other collections, so that its qualities are now ascertained. We have before us a letter from the Hon. J. M. Earle of Worcester, which came with a very fine specimen of the pear, from which our drawing and description are made. We deem it unnecessary to repeat



4. GANSEL'S LATE BERGAMOT.

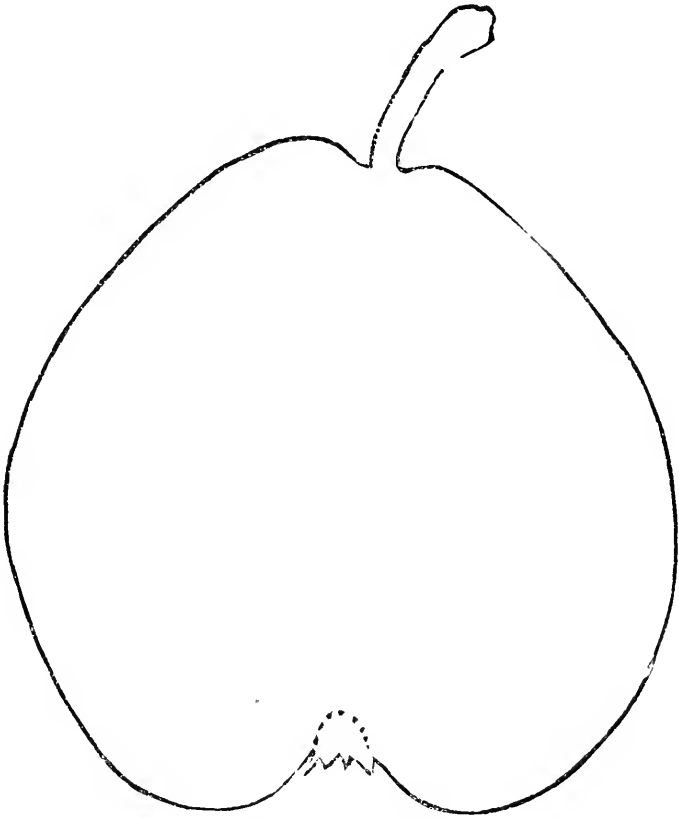
Mr. Earle's letter, and refer to the December number, 1865, page 367. We are much indebted to him for his kindness, which we doubt not will be appreciated by all pear cultivators. We add our own description.

Size, medium, about two and a half inches deep, and three inches in diameter: Form, roundish oblate, depressed at the base and crown: Skin, fair, dull yellowish green at maturity, with a faint shading of blush on the sunny side, and thickly dotted with greenish specks: Stem, medium length, about half an inch long, moderately stout, fleshy at the base, and obliquely inserted in a small shallow cavity: Eye, open, and

moderately sunk in a large, open basin; segments of the calyx, large, broad, long, tapering, reflexed: Flesh, yellowish white, coarse, melting, juicy, with much of the flavor of Gansel's Bergamot: Core, large, little gritty: Seeds, medium size, broad, and shortly pointed, brown. Ripe in November.

240. BEURRE' DE LANNOY.

Among the new pears which fruited with us for the first time last year, was one received from Belgium, under the name of Beurré de Lannoy. As we cannot find any other account of it than that contained in the Belgian catalogues,



5. BEURRE DE LANNOY.

we are not certain that it is the true variety. The description states that it is "very melting, form of the Beurré de Rance, and ripens at the same period." Our specimens were very melting, and the form similar to the B. de Rance, but they ripened up in November. This, however, is not unusual in winter pears, especially the first year of bearing. We are

inclined to believe it to be the true *Beurré de Lannoy*. It is a pear of great excellence, and fully sustains its reputation in Belgium, where it was "crowned with honors by the Societé d'Horticulture of Tournai."

In general habit of growth, the tree resembles the *Flemish Beauty*, but, unlike that variety, the foliage remains green and vigorous up to the latest period, and the fruit, which is handsome, with a rich bronzy crimson cheek, is produced regularly over the branches in clusters, and presents, among the green foliage, a picture of health and vigor. Another year will enable us to test it more thoroughly, but it appears to possess merits which will class it with the best of the new pears.

Size, large, three inches in diameter, and three inches long: Form, roundish obovate, largest about the middle, rounding off to the crown, and narrowing little to the stem end, which is obtuse: Skin, little rough, dull yellow at maturity, more or less covered with rough russet, deeply bronzed with dull red in the sun, and dotted with whitish specks: Stem, short, about half an inch long, rather slender, and set in a very small contracted cavity: Eye, medium size, open, and rather deeply sunk in a large, open basin; segments of the calyx, short, broad, rounded, connected: Flesh, yellowish white, coarse, very melting, and full of a rich, sugary, refreshing, slightly perfumed juice: Core, medium size: Seeds, large, short, broad, brown: Ripe, October and November.

FLORICULTURAL NOTICES.

NOVELTIES OF 1865.—If, in casting a look backwards to the more prominent objects which have been brought into view, we commence with the aristocratic *Orchid* family, we shall find that amongst the now favorite *Odontoglots* some gems of the first water have been discovered. There is, for example, *Odontoglossum Alexandræ* and *O. Bluntii*,—whether they be one or twain we leave orchidologists to settle,—which take rank amongst the most beautiful of their race; while,

scarcely less lovely but of another type, are *O. Hallii* and *radiatum*. Then the fine genus *Phalænopsis* has received some most welcome additions in the shape of *P. sumatrana* and *P. Luddemaniana*; what Prof. Reichenbach calls the finest forms of *Lælia elegans* has appeared in the variety he has named *Wolstenholmia*; and *Lissochilus Horsfallæ*, from the Calabar region, has given us a grand addition to the terrestrial race.

Amongst stove plants we may refer to *Authurium magnificum* as having won and kept a foremost rank amongst the now fashionable class of fine-leaved species. This plant was introduced by Mr. Wier, and has successively borne the names of *grande* and *cordifolium*, but its recent publication in the *Revue Horticole* with a plate, under the first-mentioned name, will give to that a place in the annals of science which the others cannot claim. Another lovely plant of this category is the *Calathea Veitchiana*, the finest of the dark mottled-leaved plants cultivated under the name of *Maranta*; while another very curious example of the same family, and beautiful withal, differing in presenting a remarkably light and lively tint of green in conjunction with the regularly-disposed dark blotches, and shown as an unnamed species of *Maranta*, now bears the designation of *Calathea tubispatha*, from the remarkable tubular form of the spathe, whence its flowers issue. Of stove plants valuable for their blossoms, the most important acquisition which occurs is the *Manettia micans*, which may be described as resembling *M. cordifolia*, but with larger flowers, produced in greater abundance on the numerous short lateral branches.

A few important additions have been made to the list of hardy perennials. *Primula Parryi*, a broad-leaved, dark purple species from the Rocky Mountains, is a grand acquisition in its class; as is *Pentstemon grandiflorus*, with ovate, glaucous leaves and large lilac flowers, from the same region. *Anemone angulosa*, one of the *Hepatica* race, comes as a choice spring flower, quite eclipsing the *Hepaticas* which have long been familiar as garden flowers; while in *Abronia fragrans*, another Rocky Mountain denizen, we gain the finest known species of its genus, and what seems to be a valuable hardy rock plant.

Of choice exotic Ferns, *Adiantum fastigense*, shown at one of the Kensington meetings, is the most curious and most beautiful addition of the past year. It adds to the grandeur of *A. trapeziforme* a most charming, drooping, and exceedingly leafy and fungy character of growth, while the fructifying parts, sparingly produced, resemble *A. tenerum*. This is West Indian, and being reported as a seedling, may possibly be a hybrid, and, if so, will possess still higher interest. From South America we have the curious scrambling, flexuose, refracted *Gymnogramma*, with finely-cut leaves, which bears the name of *G. flexuosa*. The *Gleichenia cryptocarpa* of Chili, a well-marked example of the more elegant of the *Gleichenias*, has been introduced to public notice as hardy in Yorkshire; while from the Northwest has come the *Polystichium muratum*, a fine evergreen fern, allied to the *falcinellum* of Madeira, and to our own *Lonchites*. New native ferns have been acquired, either as wild plants or cultivated sports, in considerable numbers. We may mention as occurring amongst the more interesting of them, which we hope shortly to notice more fully, a form of *Polystichium angulare*, called *parvissimum*, a fern of extremely elegant symmetry, and *Asplenium adiantum-nigrum* *Bellaïrsiæ*, as remarkable for its curious eccentricity of development.

The raisers of new seedling flowers have not been inactive, but during the year have made valuable contributions to the general progress. We cannot follow them in detail, for their name is legion, but we may refer to a few in illustration. Thus Mr. Parsons is working on with the *Achimenes*, year by year, obtaining some advance in size, form, color, or quality. Mr. Turner has introduced to our notice some exquisitely beautiful Alpine *Auriculas*. In *Azaleas* we have some additions, but nothing like the advances made in the previous year, by the advent of Mr. Veitch's *Stella*, and its kindred kinds. *Cinerarias* have yielded us one dark self, called *Lord Amberley*. Of the many new *Chrysanthemums*, we should point especially to *Gloria mundi*, as the flower of the year—a flower of exquisite form, and remarkable for its brilliant color, which is a rich golden yellow; while *Golden Beverley*, another shade of pure yellow, and lovely in tint, though

hardly equalling the former in quality, may surpass it in usefulness as a show or decorative plant. The ranks of the Fuchsias have as usual been acceptably replenished from the stores of Mr. Banks; as those of Pelargoniums have from the choice seedlings of Mr. Beck, Mr. Hoyle, and others. Beaton's Bedding Pelargoniums are working a revolution amongst "bedding stuff," the earlier varieties having already made a reputation; while many later ones, still in Mr. Paul's hands, will usefully supplement, and in certain cases surpass, the originals. Mr. Fleming, too, has gained in this direction some useful improvements on the score of color. Mr. Wells has been successfully working from the leafage point of view, and others, right and left, are devoting themselves to the production of new sorts; so that probably in no modern flower is there so fair a prospect of a succession of acquisitions as amongst these bedding races of Pelargoniums. The double Pyrethrums perhaps come next to them in this respect, only they differ in being comparatively new and unknown. In the hands of Mr. Salter and others they are, however, surely progressing, for many very beautiful and distinct sorts have been gained, and many more, we cannot doubt, are buried in the womb of time. Those grand old flowers, the herbaceous Lobelias, after standing still for many years, have at length made a new start, and in place of the mere scarlets and purples of former days, we shall now have a variety of most pleasing shades of color, including pinks, roses, carmines, crimsons, maroons, violets, and many intermediate tints. In the Lobelia Snowflake, too, a pure white variety of Lobelia ramosa, we have gained a superior white flower for summer massing. The Mimula has undergone a strange metamorphosis in a duplex-flowered race, which has sprung up and seems to be permanent, as Mr. Bull already holds several distinct varieties. Our readers will doubtless remember, from the description of them we have already given, that they are changed by the conversion of the calyx into the semblance of a colored corolla, so that the blossoms grow hose in hose fashion, the true corolla falling off early as usual, while the colored calyx remains for a long time fresh and perfect. Amongst English-named Roses, that called Dr. Lindley is,

we know, held in high esteem by skilled rosarians, and we ourselves have full confidence that it will prove worthy of its name. Mr. Mills, among Verbenas, has given us quite a new race, which, from its close dwarf habit and profusion of blossoms, will probably receive some of the prestige of that flower for a summer bedder. And finally, lest we tire the patience of our readers, the violet has not escaped improvement, as witness Mr. Graham's new variety, called the Czar, which, in point of size and vigor, eclipses all that have preceded it.— (*Gard. Chron.*)

877. LANTANAS, Hybrids.

Bedding plants of great beauty. *Ill. Hort.*, 1865, pl. 453.

These are three hybrids, raised from seeds by M. Ferrand, horticulturist of Marseilles, viz., Conqueror, Rougier Chauviere, and Elegantissima. Notwithstanding the number of beautiful kinds we already possess, these seem to be new in color. Conqueror is of a deep rich scarlet, changing to crimson; Rougier Chauviere yellow, changing to orange scarlet, and Elegantissima pale straw, changing to deep blush or pink, with a dark eye. They will undoubtedly prove great acquisitions to our gardens. (*Ill. Hort.*, Oct.)

878. CAMELLIA DIORUSIA PONIATOWSKI. Garden Hybrid.

A greenhouse shrub. *Ill. Hort.*, 1865, pl. 454.

Another of the Italian seedlings, obtained by M. Boutourlin of Florence, and sent to Belgium. The flowers are of the largest size, of a beautiful white, shaded or reflected with soft rose, sometimes slightly striped with crimson. The numerous petals are rounded and of large size; the imbrication is perfect, with a slight disposition to the star or hexangular form. Such are described in a few words the qualities of the variety, whose habit and foliage leave but little further to say. (*Ill. Hort.*, Oct.)

879. CLIANTHUS DAMPIERI VAR. FLORE ALBA RUBRO MARGINATA. DAMPIER'S WHITE-BORDERED CLIANTHUS. (Fabaceæ.) New Holland.

A greenhouse shrub; growing 6 feet high; with white flowers margined with red; appearing in summer; increased by seeds and cuttings; grown in light rich soil. *Ill. Hort.*, 1865, pl. 456.

This is a new and remarkable variety of the *C. Dampieri*, which has been so great a favorite with the English cultivators. The flowers are very large, full four inches long, with white petals, a black spot in the centre, and elegantly bordered with a distinct line of deep crimson or scarlet. It has not been so easy of cultivation as the old *C. punicens*, but the size of the flowers, and their rich colors, will well repay any extra care to bring it to perfection. It was introduced from New Holland. (*Ill. Hort.*, Nov.)

Massachusetts Horticultural Society.

Yearly Meeting, Jan. 6th, 1866.—The stated quarterly meeting for January was held at the Society's Hall, Jan. 6th, the President in the chair. The records of the last meeting having been read, the President proceeded to deliver the customary annual address as follows:—

GENTLEMEN OF THE MASS. HORT. SOCIETY:—

We are gathered once more together, on this opening of the new year, under auspices more cheering and results more gratifying than has fallen to the lot of this Society since its organization. For four years a great war has desolated a large portion of our land. Agriculture, commerce, and the arts, for a time, have been arrested in their progress; and the energies as well as the resources of the people have almost solely been devoted to the preservation of our Union. But these four years of doubt, of anxiety, and at times almost of despair, have passed and gone, and a great nation stands before the world disenthralled and free! Victory has crowned our efforts. Peace again reigns within our borders. The last remnant of a barbarous code has been swept away, by the voice of the people, and henceforth we can glory in the name of American. Even amid the sad memories, which linger over the past, should we not rejoice at these grand results? and humbly and devoutly acknowledge the wisdom of Him, whose protecting hand has safely guided the nation through its perilous course.

But there are other causes which render this occasion so welcome to us. We are assembled here to-day in this new and beautiful edifice, the proud memorial of your prosperity; and as we survey these commodious and pleasant rooms, and these large and elegant halls, and contrast them with the former accommodations of the Society,—even with its old hall in School Street,—we feel a glow of satisfaction that so much has been accomplished, and that our labors have been crowned with such a rich reward. It was just six years ago on the 24th of December last, that the Society voted to dispose of their old estate. Truly did our last President say, in one of his appropriate addresses, “that we left the spot with feelings of deep regret,”

for there we had "many pleasant meetings." We knew not whither we should go, or how we could, with our means, soon replace a building so centrally situated and combining so many advantages. But we settled quietly down in a quiet place, where, if we remained comparatively unknown, we did not lose all our zeal and enthusiasm in our favorite pursuit. Gradually, however, gaining courage, and cheered by manly hearts, in the gloomiest period of our country's history, we resolved once more upon resuming the position we had so long and honorably held. This resolve, firmly maintained, has enabled us to formally dedicate this Temple to Horticultural Science. This surely should make this opening meeting of the year one of more than ordinary interest, and one deserving our hearty congratulations.

The year just brought to a close has therefore been, at least to us, one of great satisfaction,—for the peaceful reunion of our country, and the return of our Society to the place it so long occupied. The completion of the building so late in the year, gave us but little opportunity to enjoy its advantages, but all who were present at the Annual Exhibition—the first one held in this edifice—will attest to the size and beauty of the halls, and their complete adaptation to the wants of the Society. A year of occupation will enable us to appreciate more fully all its conveniences.

The past season was certainly not a very propitious one to the cultivator. Unprecedented drought told severely upon the garden and the orchard. Flowers and plants suffered from the absence of the much-needed rain. Had the building been completed in the spring, and had our exhibitions been made here, we might have regretted that our exhibitors did not show more enthusiasm with so many inducements to make a display. But in the premises we occupied this was not materially noticed, and the weekly exhibitions of the summer were really very good. The Annual Show, as you have already been informed by the chairmen of your respective committees, in their excellent reports, was a grand success. Every foot of available space was filled, and still more room was needed. The pears were never equalled at any previous exhibition. The Committee of Arrangements labored diligently to accommodate every contributor; but as they could not or did not anticipate so much in so unfavorable a year, and with halls of which they could not have any experience as to the arrangement of tables, there were some inconveniences which will not probably occur again.

For the first time for many years, I am glad to announce, if you are not already aware of the fact, that the Annual Exhibition was a financial success, giving a reasonable surplus into the Treasury, in the present needs of the Society. I have myself no doubt that you have witnessed the last of those exhibitions,—got up with so much labor and great expense,—which will not pay. It is unnecessary to refer to some of the causes which have combined to make them expensive to the Society. Hereafter I think there need not be any fear of a proper appreciation of the magnificent products of our gardens, which are so bountifully placed before the public. The Society does not now expect or look to gain alone, as an object of their annual display. They are to bring out all the rich treasures of the garden

the greenhouse, and the orchard—to show what are the most beautiful flowers and the best fruits—to elevate the standard of cultivation,—and to encourage and reward the gardener and amateur for the best specimens of their skill. But just in proportion as these exhibitions are successful in aiding the Society in its means to accomplish these objects, they will faithfully be devoted to that purpose. The public will soon learn what we are doing; and there is too much intelligence, too much taste, and too much liberality in the community to allow the labors of such an institution as ours to go unrewarded. The responsibilities we have incurred will be met in the spirit in which they have been made.

It is just two years ago to-day since a committee was chosen to consider the expediency of erecting a building. The doubts and fears of that day have been dispelled, and the building is now complete, with the exception of the beautiful statues—the gifts of generous men—which will undoubtedly be ready for their appropriate places by the 1st of May next. The stores have all been leased to responsible tenants, and the two halls have been constantly occupied since they have been dedicated. The upper or large hall has been furnished with neat, appropriate and substantial seats, making it a desirable place for concerts or lectures. It is now occupied on Sundays for religious worship, by the society of Mr. Gaylord. So far as we have heard, it has given entire satisfaction, and for fairs, of which three have already been held, the two halls afford greater conveniences than any building in the city.

The library has been furnished agreeably to a vote of the Society, under the direction of the library committee, and you have ample evidence of the good taste and excellent manner in which they have discharged the duties committed to them. The library is in a flourishing condition. The chairman has stated in his annual report that the number of books taken out is constantly increasing, and under his careful supervision no doubt it will become a powerful auxiliary in the diffusion of a more correct taste, and sound principles of cultivation. It is the object of the committee, as it is the desire of the Society, to have the library open at all times, and become, as it should, an attractive place of resort to every member.

I am happy to inform you that we have received from Mount Auburn Cemetery, for 1865, the very large sum of upwards of \$10,000, which is more than was ever paid to the Society. This great increase, without any additional expenses, will afford increased means of reducing the floating debt incurred in the erection of the building, and enable the Society to begin at an early period the fund necessary for the payment of the mortgages upon the property. If the receipts shall continue to increase, or even remain as large for a few years, with the aid of rents received from the two halls, the entire debt of the Society will soon be cancelled.

The Report of the Finance Committee will give you all the Transactions of the year, and I have no doubt you will find them highly satisfactory. There has been paid on construction account, one hundred and twenty thousand one hundred and seventy-three dollars eighty-five cents (120,173 85.) Notes have been given to the amount of sixteen thousand three hundred and

fifty-five dollars and fifty-five cents, (\$16,355 55) making the cost of the building \$136,529 40. For furniture, chandeliers, &c., there has been paid five thousand two hundred and twenty-seven dollars eighty-six cents, (\$5,227 86); being a total for the building, and furnishing the same, of \$141,757 26. Besides the above notes, to mechanics, the Society owes five notes, amounting to \$25,000, issued by the finance committee, under a vote of the Society. This makes the whole indebtedness, \$41,355 55. There is now a balance in the treasury of \$7,077 54. The assessed value of the land is \$125,000.

The stores are leased for ten years for the sum of eleven thousand five hundred dollars per annum; and the halls, since their first occupation in November, have rented for about \$3000. Taking this as the average of the six winter months, the probable yearly income of the two halls will amount to \$8000, giving a total rentage of \$19,500, besides the exclusive use of the lower hall by the Society all summer, and the upper hall when needed. As the highest estimate of rents, according to a statement presented with the report of the committee on the expediency of building (marked A,) was only \$8500 for the stores and \$3000 for the halls, this statement will show the financial bearing of the investment.

The accession of members the past year has been unusually large. Two hundred and twenty-five new members (70 life and 155 subscription) have been elected. Nine have died, and there have been six withdrawals, leaving a gain of two hundred and ten members. The present total number is 914. Nothing could better illustrate the popularity and importance of the Society than this gratifying information.

The Building Committee will soon be prepared to present you with a full report of their labors, extending over two years. A few small bills are outstanding, but they will take the earliest opportunity to lay before you a full account of their duties.

Having thus, gentlemen, given you this brief statement of our condition, I embrace the opportunity to allude to some of the duties and responsibilities which devolve upon us in our present position.

Since the organization of the Society, its by-laws have been materially changed, and the care with which the last revision was made in 1858, it was thought would prevent the necessity of further alteration for a long period. But under the new circumstances in which we are placed, with this large and very valuable property to take care of, it is believed some alterations are required; and a committee has been appointed to make such revision, who, I presume, will report at this meeting. The property of the Society is so much greater (more than quadruple) than it was in 1858, that a single glance at some of the by-laws, will show the necessity of a few important alterations. The revision has been made after long deliberation, and I have no doubt you will assent to all the changes proposed by the committee.

All who were present at the closing meeting of the year, and heard the reports of the chairmen of your committees, will cheerfully admit that they were drawn up with much labor, and fully sustained the high reputation

which their annual reports have acquired. The Committee on Gardens, for the first time for two or three years, submitted a report, recapitulating the places they had visited the last year, which they found in fine condition and well worthy of prizes or gratuities. At one period it was thought this committee was of little importance, and I am ready to acknowledge that it was, at one time, a rather extravagant committee. Yet there is no reason why it should not be a most efficient one; and so it must and will be. Under the conditions of the donation of Mr. Hunnewell, who has given the liberal sum of \$2000, the interest of which is to be annually awarded in prizes for gardens and grounds, under certain restrictions, this committee have now a special work to do; and I hope that under the supervision of the donor, as chairman of the committee, they will proceed at once to make known the terms of his donation, and that we shall have many competitors, and the decisions of the committee be of special service in disseminating a better knowledge of landscape art.

One of the special prizes for seedling fruits has just been awarded to Francis Dana, for the production of Dana's Hovey pear. This appears most worthily bestowed, and I quite agree with the Chairman of the Fruit Committee in all he has said in his report. It is only to be regretted that other prizes for seedlings were not awarded at the same time.

There has been, it appears to me, altogether too much tardiness, too much valuable time lost, in making these awards. It is true, these prizes, for some reason, were stricken out of the schedule three or four years ago. But they have now been restored. They should have been awarded long since: but if not before, now is the time to do justice to the zealous cultivators who have spent hours, and days, and weeks, and years of patient toil and watchful care, in bringing forward seedlings of all kinds. The object of these prizes is two-fold; to encourage the production of seedlings, and reward and honor those who produce them. Both should be kept in view. Yet what reward does the raiser of a new seedling have when the prize is not given until ten or fifteen years after it has passed out of his hands? And how much will such action encourage others, if they are to be put off until the seedling becomes a comparatively old variety? Every member of this Society fully appreciates the importance of its commendation of every new plant, flower or fruit. No patent for a new seedling can be obtained, nor is any wanted: but the cultivator does wish, if he raises a truly valuable product, to have the stamp of the Massachusetts Horticultural Society, that any benefit which may be gained from their good opinion may accrue to him, before it leaves his hands. Before that, it is a reward and an incentive to further exertions: afterward, one of empty honor, and almost of discouragement. The premiums are not large, in view of the great requisites demanded in a new seedling, and it should be a pleasure, as it is a duty, to make these decisions promptly, freely and heartily.

It seems to me that the production of a new flower which shall add to the adornment of every man's garden—a new fruit which shall add to the luxury of every man's table—a new vegetable which shall minister to the necessities of the whole people—is as well worthy of a **GOLD MEDAL** as the supe-

rior tone of a pianoforte, the extra finish of a piece of broadcloth, or specimens of "Diamond-cutting." These are given yearly, by our associations for the improvement of the mechanic arts, and the result is apparent in every department of industrial labor. It is the application of the brain to the inanimate things which are to become almost our necessities, and, as such, demanding our recognition and receiving a just reward.

If it was not for occupying too much of your time, I should allude to many other duties of the Society. But I shall only mention the importance of augmenting the prizes just as speedily as the funds of the Society will allow. The time has passed when we should expect our contributors to bring forward weekly, the best specimens of their skill without hope of honor or reward. If this has been done, as we know it has, it was because of the interest taken by the members, and because the Society was not in a condition to do any more than it has already so nobly done. But now that our circumstances have changed—now that we desire to honor the contributor as he has honored us—as have those of many of its oldest exhibitors, there is no reason why we should expect to call out highly meritorious specimens without a corresponding means of remuneration by at least an honorable competition for liberal prizes. The value of plants has changed—and many persons do not like to incur the risk of injury to rare specimens. The present high standard of plant-culture in Great Britain is entirely due to the offer of liberal premiums; and not intending to find the least fault with what has been done—and which I am sure has been for the prosperity of the Society,—for the future let us raise the standard of excellence—make the premiums large—and create such emulation as will fill our Hall with magnificent specimens, and render our exhibitions ever fresh, attractive and beautiful.

Gentlemen: Spring and summer will soon be upon us. In conclusion, I have only to remind you of your duties, and to urge you to redouble your efforts in behalf of our Society. Our tables must be filled with the most beautiful flowers and the finest fruits. Set about the work in good season, and resolve that no pains shall be spared on your part to render the exhibitions the present year superior to any that have preceded them. Our building will in itself be attractive; but you desire no outward show without a corresponding adornment within.

Tendering to you my thanks for your attention, I offer you the congratulations of the season.

At the conclusion, Mr. J. F. C. Hyde moved the thanks of the Society for the very excellent address, and that a copy be requested for publication. The motion was unanimously sustained.

On motion of S. H. Gibbens, it was voted, that the thanks of the Society be tendered to Dr. E. Wight, Corresponding Secretary, and F. Lyman Winship, Recording Secretary, for their long and valuable services, and that some token be presented to them. The Executive Committee were authorized to attend to the duty.

It was also voted, that the thanks of the Society be tendered to E. A. Story, for his services as Chairman of the Flower Committee, and that the

Executive Committee be authorized to present him with some token of the Society's regard.

The following gentlemen were chosen a Committee of Arrangements for the next Annual Exhibition:—P. B. Hovey, Chairman; P. Barnes, J. F. C. Hyde, Abner Pierce, C. N. Brackett, E. A. Story, E. W. Buswell, Geo. Craft, D. T. Curtis, S. H. Gibbens, E. F. Washburn, F. P. Denny, and R. M. Copeland.

The Committee appointed for that purpose laid before the meeting a revision of the By-Laws, which was read twice, approved by the meeting, and authorized to be published for distribution.

Adjourned one month to Feb. 3.

Feb. 3.—An adjourned meeting of the Society was held to-day—the President in the chair.

Capt. Austin, from the Committee to settle with Mount Auburn, made a report.

Whole amount of sales, plots,	\$42,517 87
Less expenses,	1,942 00
	<hr/>
	\$40,575 87
Society's proportion, (one quarter,) is	\$10,143 97
which has been received by the Treasurer.	

The Finance Committee submitted their report for 1865, an abstract of which we present:—

RECEIPTS FOR 1865.

By cash in treasury,	229 54
“ Dividends,	802 00
“ Assessments and admissions,	2,400 05
“ Receipts from Mount Auburn, 1864,	7,719 49
“ Rent of stores to Dec. 1,	5,135 98
“ Rent of halls to Jan. 1,	2,530 00
“ Gross receipts Annual Exhibition,	1,822 00
“ Miscellaneous receipts,	570 40
	<hr/>
	\$21,209 46
Rec'd from H. D. Parker's note,	22,430 67
“ Stock and certificates,	55,421 53
“ Discounts of Market Bank,	23,342 92
“ Mt. Auburn, 1865,	10,000 00
	<hr/>
	\$132,404 58

EXPENDITURES FOR 1865.

By cash paid premiums and gratuities, 1865,	2,456 00
“ “ Salaries and compensations,	1,475 00
“ “ Rent of old rooms,	1,329 16
“ “ Expenses Annual Exhibition,	1,371 76
“ “ Library,	198 98
“ “ Taxes,	3,160 00

By cash paid Insurance,	273 00
“ “ Printing and advertising,	499 50
“ “ Gas and water rates,	330 56
“ “ Interest on mortgage,	5,500 00
“ “ Medals, testimonials, &c.,	367 00
“ “ Mechanics and miscellaneous,	4,264 37
	<hr/>
	\$21,255 33
Paid for certificates of deposit,	32,000 00
“ “ Construction of Building,	66,873 85
“ “ Furniture, chandeliers, &c.,	5,227 86
“ “ Cash in treasury, Jan. 2, 1866,	7,077 54
	<hr/>
	\$132,404 58

PROPERTY OF THE SOCIETY.

Real estate, cost,	105,132 34
Building, paid in cash,	120,173 85
“ “ notes,	16,355 55
Furniture,	5,227 26
Library, furniture, &c.,	5,000 00
97 shares Passumpsic River Railroad,	7,275 00
Cash in treasury, Jan. 2, 1866,	7,077 54
	<hr/>
	\$266,241 54

The Society owes notes, &c., \$141,355 55.

On motion of E. W. Buswell, it was voted, that the days of exhibition be changed from Saturday to Wednesday.

The Committee of Arrangements reported the 18, 19, 20 and 21 of September as the days for holding the next Annual Exhibition.

Adjourned one month, to March 3d.

Obituary.

DEATH OF PROF. J. J. MAPES.—Died at his residence in New York, Prof. J. J. Mapes, at the age of 59.

Few among the agricultural writers of the day were better known than Prof. Mapes. As Editor of the *Working Farmer*, he acquired a reputation for scientific attainment which gave to his teachings great importance, and with a large class of readers he was considered one of the most eminent of our agricultural writers, and the founder of a new system of agriculture based upon theories peculiarly his own. At the same time another class considered his agricultural knowledge as wholly superficial, and his title even of Professor, a mere cover for crude theories which could never be carried into practice, or, if attempted, would result in failure. Knowing Prof. Mapes, as we have, for many years, without according to his writings the importance

which have been claimed for them, and believing many of his theories unsound and of no great value, yet we cannot deny that his labors have done great good, and awakened an interest in scientific culture which has been of essential service in the advancement of agriculture throughout the country. His horticultural knowledge, as promulgated in the *Farmer*, was not affirmed when put in practice, and though he succeeded in making a good deal of a poor farm, to follow his system in the culture of fruit would lead to anything but profitable results.

As a scientific writer he had a high reputation, but as a practical cultivator his success was never remarkable.

Prof. Mapes was long an active member of the Farmers' Club of the American Institute—where we first had the pleasure of his acquaintance—and, until his failing health prevented, continued to take an active part in its proceedings. Indeed, at one time he was the active participator, and almost the life of the association, so far as it was connected with agriculture.

As a friend and companion, Prof. Mapes was gentlemanly, genial, courteous and kind; always fond of a joke, and ever ready with some anecdote or pleasant story. His loss will be deeply felt by a large circle of friends.

DEATH OF MR. FEARING BURR.—Died at his residence in Hingham, Mass., Mr. Fearing Burr, aged 87.

Though unknown, perhaps, to most of our readers, Mr. Burr's name deserves a record in our pages for the deep interest he has ever taken in horticulture. Three or four years ago, we gave some account of our visit to his garden. Probably few persons in Plymouth County have done more to promote the culture of fruits than Mr. Burr. Burr's Sweet apple originated in his garden. Up to the very last days of his life, he was discussing the propriety of adding to his already large collection some of the new fruits, and also flowers, of which he was exceedingly fond. He was the father of Mr. Burr, the author of the *Vegetables of America*, and it was in the well-cultivated garden of his father that he became so deeply interested in horticulture, whose attractions have resulted in giving to the public one of the best books that has ever been published on the subject.

In the death of Mr. Burr his native town has lost an intelligent and honored citizen, and the public an active laborer in the cause of horticulture.

Horticultural Operations

FOR MARCH.

FRUIT DEPARTMENT.

FEBRUARY was a variable month, moderately warm in the early part, but cooler afterwards, and now moderate again. It has, however, been more sunny than January and more favorable for forcing operations.

GRAPE VINES, in the earliest houses, will have their crop fully mature, or about ready for cutting. Keep the house cooler and dryer, and they will hang upon the vine till the crop in the next house is ripe. Vines in grape-ries will now be breaking into leaf and should have more attention. Syringe often until the flower buds are well advanced, and maintain a genial, moist atmosphere at all times. Tie the vines up to the trellis firmly, and increase the temperature as the season advances.

This month will be the time to disbud, that is, rub off all superfluous shoots not wanted, to form spurs for next year's crop; tie in the laterals as they advance, being careful not to do this too firmly as they are liable to break; draw them in little at a time. Cold houses should be kept well aired in fine sunny weather to prevent the heat from starting the beds until April.

ORCHARD HOUSES may now be put in order for bringing in the trees. By the middle of the month there will be very little danger of confining the warmth so as to swell the buds gradually.

STRAWBERRIES, in pots, should be well watered whilst the fruit is swelling, using liquid manure occasionally.

SCIONS may be cut this month.

PRUNING may now be attended to in good weather.

GRAFTING may be commenced the last of the month, beginning with the cherries, which succeed with more certainty when put in early.

FIGS, kept in the cellar, may be brought into the greenhouse or grapery to forward the crop.

FLOWER DEPARTMENT.

March is a busy month for the gardener, who has much to do; for where there are numerous houses and a garden to be well filled with showy plants, a large stock should be provided, and this is the season when most of the preparations should be made to accomplish the work. Various seeds should be sown immediately; frames should be got in readiness to harden off the stock; hotbeds, for bringing on the tender stuff, and every bit of spare room should be filled with a good healthy stock of Verbenas, Scarlet Geraniums, Salvias, Petunias, and other showy things. Summer flowering bulbs must not be forgotten; and lastly, the houses must be kept gay and brilliant with Pelargoniums, Azaleas, Calceolarias, &c.

CAMELLIAS will now begin to make their new growth, and will require not only more liberal supplies of water, but syringing every warm day, so as to incite a vigorous growth. The plants should also be shaded during the middle of the day. Inarching may be done now, and young stock may be repotted if they require it.

AZALEAS will now soon be in full blossom. Syringe every day until the flowers begin to open, and water more liberally. A slight shade will cause them to retain their beauty for a much longer period. Head in plants done blooming.

PELARGONIUMS will need attention. Turn the plants round at least once a week, and water more liberally, at the same time give an abundance of

air and keep the house rather cool at night. Continue to repot young stock, and tie out specimens so as to form handsome symmetrical bushes.

CINERARIAS will now begin to flower; water occasionally with liquid manure, and keep down the green fly by proper fumigation.

ORANGE AND LEMON TREES will now begin to grow, and will need more water, and occasional syringing.

HEATHS AND EPACRIS will now be in full bloom; keep in a cool part of the house and water rather more liberally. Now is a good time to put in cuttings for young stock.

FUCHSIAS, intended for fine specimens, should be encouraged by a shift into larger pots.

CALADIUMS should be very carefully watered until they are well started, and should be kept in a very warm part of the house, or if a hotbed is at hand it will answer.

BEGONIAS will soon require a shift into larger pots.

JAPAN LILIES will now begin to grow, and will require a better position, near the light. Water sparingly till the shoots are well advanced.

SEEDS of Chinese Primroses, Acacias, and other greenhouse plants should now be planted.

SEEDS of many annuals for the early decoration of the borders should be planted. Those sown last month should now be potted off, three or four in each pot.

TUBEROSES may be started for very early flowering. Pot and place in the hotbed or greenhouse.

CUTTINGS of bedding plants of all kinds should be put in this month, as they will not only root better, but will make much stronger plants.

HYACINTHS, and other bulbs in pots, should now have a good situation near the light, and an abundance of water.

FERNS should be looked after, and, if not repotted, now is a good time to do it.

ORCHIDS should have more moisture as they show signs of growing. They will also require more shade from the sun as the season advances.

CANNAS should now be divided and repotted in order to secure good stocky plants for immediate effect.

Sow **PERILLA NANKINENSIS** for the decoration of the flower garden.

VEGETABLE DEPARTMENT.

If our directions were followed last month for the completion of the hotbed and the planting of the various seeds, they will by this time require more space, and if other beds are not already made they should be got ready immediately.

TOMATOES should be transplanted either into pots or directly into the bed; for early use the former is the best.

CUCUMBERS should be hilled out, that is, one pot of the plants should be set out in a small hill of good soil under the middle of each light.

Sow **Lettuces, Radishes, Cauliflowers, &c.**, for a succession.

POTATOES may be started in the old bed, already exhausted of part of its heat.

STRAWBERRY CULTURE IN NEW JERSEY.

NOTHING is more important than facts to illustrate the relative value of any fruit. If we could have these, a great deal of trouble, disappointment and expense would be saved, and fruit culture would rapidly extend, and prove not only a source of great profit, but our markets would be supplied with superior fruit. But instead of facts, we have an abundance of general information, without adding but little, if anything, to our stock of real knowledge. It is the absence of facts which renders so much that is written upon horticultural and agricultural science almost valueless. Theoretical essays, new methods of culture, and experimental trials are each and all subjects of the deepest interest, as leading to successful results, but practically we require facts upon which to base all our operations, without which we cannot arrive at satisfactory conclusions.

Of what value is the statement that this, that or the other pear or apple is the most profitable to cultivate, if the writer has not had long experience and careful observation in the culture of all the varieties, so as to form a correct and reliable opinion? Or of what importance that this or that mode of culture is the best, if he has not made a thorough trial of all? What value should we attach to the statement that this or that fertilizer was the best for any crop, unless the writer had had experience with all, and, after careful and thorough trial, gives us facts as the result of his observations? If we cannot have these, the information is only general, and leaves us little if any farther in advance of our previous knowledge. It is because these are wanting that so much that is written adds so little to the absolute accumulation of valuable information.

These few remarks are suggested by the perusal of a small pamphlet, containing the proceedings of the "West Jersey Fruit Growers' Association," for 1865, being the third annual

report, and as it contains much information upon strawberry culture in New Jersey, the great source of supply for the New York and Philadelphia markets, we think our readers will be generally interested to learn something of the culture of this fruit upon so extensive a scale.

Until the recent formation of the various county societies throughout many of the States, for the collection of pomological information, first suggested and called for by the American Pomological Society, we had few or no facts concerning the various crops of fruit in the several States, or any definite knowledge of the quantity produced. We are yet without a great deal of reliable information of this kind, but some progress has been made towards this most desirable result, and in time we hope to have accurate reports from every part of the country, showing not only the quantity of fruit produced, but the varieties which have been proved most certain and reliable, as well as the most profitable to cultivate.

With the strawberry this is very important; perhaps as much or more so than any other fruit. For if we are to believe the statements which have been made from time to time during the last thirty years, the real difference in the product of some of the varieties is enormous, these statements varying from 50 bushels to 600 bushels an acre. Frequent assertions are yearly made of the product of 300 to 400 bushels an acre of the Wilson, and scarcely a new seedling is introduced but what is reported to produce twice as much as any previous sort. But the New Jersey cultivators have set this at rest, and although there may have been instances of very high culture where upon some favorable spot, in a small bed, the produce has been *at the rate* of 300 bushels to the acre, we think it will be very difficult to find a cultivator who can show, by actual measurement, he has raised one third of the quantity upon a whole acre. It is the product on a liberal scale of culture that will test the value of any variety, and this we have in the report before us.

In March, 1865, a committee of the association was appointed to procure information relative to the kinds of strawberries cultivated, and the quantity produced. Printed circulars were sent to all the fruit growers of West Jersey,

and although the answers were not so full and extended as the committee desired, the following are the results, so far as reported:—

In six townships there were 510 acres of strawberries in bearing last season, as follows; in Burlington 220, Beverly 200, Chester 65, Cinnaminson 22, Evesham 12, and Newton 3; yielding in all 29,030 bushels of fruit, worth in market \$133,737.41. The general average per acre was 55½ bushels; viz.: Burlington 45, Beverly 56, Chester 82, Cinnaminson 83, Evesham 55, Newton 43; and the average price per bushel \$4.60. The yield and price are both a trifle lower than last year; the former is accounted for in Beverly from the fact of the growers there falling into the practice of neglecting cleaning, preferring to renew the beds after two crops have been taken.

The varieties generally cultivated for the last season's market, were Wilson's Albany, French's Seedling, Downer's Prolific, Cutter's Seedling, Lady Finger, Hovey and Iowa. The Wilson is the main dependence in Burlington and Beverly, though almost discarded in the other townships.

The cultivation of the strawberry is on the increase; the returns showing that there will be 60 acres more in bearing next season than the last. The old plan of planting and cultivation is still the only one which meets with approval here. It is that of setting in rows five feet apart, and from ten to eighteen inches in the row, according to the vigor of the variety, and training into beds from three and a half to four feet wide, and covering in the early part of winter with fine stable manure. After picking they are sometimes cleaned and allowed to fruit a second season, though it is becoming common to pick them but a single year, it being considered less expensive to raise a new than to clean an old bed, and that the former will yield a larger crop; though the Lady Finger is reported in Beverly to pick far better at its fourth fruiting, if well cared for, than at any previous year.

The French, Cutter and Downer are cultivated in Chester and Cinnaminson with marked success. They are all vigorous and rapid growers, and large producers of good sized fruit;

qualities which under our system of cultivation are most desirable. The first great desideratum is vigorous and rapid growth, since we must be able to make beds with certainty in a single season; next, we want the fruit in abundance and of good size. The latter good qualities without the former are worthless under our system. Perhaps no other three varieties thoroughly tested here, are so satisfactory as those named above. The Lady Finger at times yields enormous crops, and being the finest berry we have for market purposes, is then very profitable; but it is too uncertain to be extensively relied on.

The Agriculturist, New Jersey Scarlet, Green Prolific, and Tribune strawberries promise well. The Green Prolific is a strong plant, with very hardy leaf, and is exceedingly productive. The berries are large, but a little inclined to be soft. Churchman's Great Eastern is a strong vigorous plant, throws out but a few runners, and produces an abundance of large fruit; is well adapted to hill culture. Russell's Prolific and Triomphe de Gand, though doing well on very strong rich soil, are not adapted to this locality for general cultivation.

A statistical report of the berries sent to market from Hammonton, in 1865, is at command, and would perhaps be interesting. It credits them with sending 132,409 quarts, and receiving \$33,325.00 for them, or over 25 cents per quart; our own average is less than 15 cents; an unaccountable difference. The variety was generally the Albany, and universally grown on the hill system.

Here we have a general average of 66 bushels to the acre, Burlington being 45, Beverly 56, and the highest, Chester, 82, and Cinnaminson 83 bushels to the acre. Now, as the Wilson is the "main dependence in Burlington and Beverly," we have the real product of this variety, amounting to about 50 bushels an acre, considerably less than the 300 bushels so often claimed as the product.

The French, Cutter and Downer are cultivated in Chester and Cinnaminson, and these, it appears, yield nearly one half more than the Wilson, the latter being in fact "almost dis-

carded" in all the townships except those first named. The relative market value is therefore at once established.

It appears that the New Jersey cultivators are adopting the Belmont system of picking the bed but one year, "it being considerably less expense to raise a new, than to clean an old bed." Undoubtedly they are right.

Unfortunately we have not the statistics of the actual crop of the strawberry cultivators in our vicinity to make a general comparison, but we have such results of the Belmont growers as will enable us to compare them with those of the New Jersey growers. We have the evidence of several cultivators,—and no doubt if pains were taken the whole might be obtained,—which may be taken as a fair average of the whole. Messrs. J. O. Wellington, Patterson, Locke and others, the largest cultivators, inform us that the product of their plantations is about 4000 quarts,—that is, 128 bushels,—to the acre; often it exceeds this, having reached as high as 4500 quarts. The varieties cultivated are the Hovey, Jenny Lind, and Brighton Pine.

Here we have nearly three times the quantity produced of that of the New Jersey cultivators: whether this is to be attributed to the varieties or modes of culture is not fully established; but the inference is from what the committee state that the systems are similar, that the greater product results from the varieties cultivated rather than from the mode of culture.

After all that has been said about the productiveness of strawberries, it is gratifying to have these established facts, and we hope that other societies in various parts of the country will endeavor to collect similar statistics, which will be of great value. There will then remain no doubt of the actual worth of any strawberry. At present, only those who investigate the subject themselves are aware of the very great difference in the value of many fruits; but let this information be general, and the whole public will be immensely benefited, and saved from disappointment and great loss.

We conclude our remarks with the following notice, by the committee, of the various modes of culture adopted in different townships, which were each examined by them:—

It was interesting to observe the different modes of treatment in different neighborhoods, and each claimed as best where followed ; and it is believed by more frequently visiting each other's premises, to compare views in regard to their proper treatment, with the fruit and plants immediately in view, would be the means of developing much valuable information in relation to the true principles of culture that should govern our operations in raising this valuable fruit. All however agree on the importance of having the soil thoroughly prepared by being supplied with proper nourishment and brought to a fine tilth by cultivation. After which the treatment differs. In the vicinity of Beverly and Burlington, they usually mark the rows five feet apart, and set the plants from twelve to fifteen inches in the rows, then plant a grain of corn to each plant ; the strawberries receiving no further culture than is required to benefit the corn, which is usually fit to cut for market soon after harvest, when the stalks are cut away, and the strawberries allowed to spread and occupy the ground without much attention from the proprietor. One farmer reported that he marketed one hundred dollars worth of green corn per acre, and the strawberries doing as well as other patches in the neighborhood, without any crops among them.

In other sections, potatoes are planted between the rows, onions in the rows, &c., by which means a partial crop of vegetables is obtained during the first season, instead of no crop before the strawberries ripen.

Early spring planting is generally preferred, yet in some cases where the plants were set late in the fall, the beds yielded better than others by their side set early the following spring. At nearly all the premises visited in the county of Burlington, the mode of setting the plants twelve to fifteen inches distant in rows five feet apart was adopted, allowing the vines to spread over the ground, some expending a large amount of labor in setting the vines regularly over the ground, while others permit them to run at random, without much care or cultivation ; and it is a question for growers on a large scale to decide, which is the most profitable method, to grow ten acres without much care and realize from one to

two hundred dollars per acre, or grow three acres with high culture and realize from five to six hundred dollars per acre? These figures it is thought fairly represent the crops produced under the two modes of culture in the several localities that came under the notice of the committee.

At Hammonton, in the county of Atlantic, a different plan is pursued; the plants are set sixteen inches distant in rows, three feet apart; the runners are all removed as they appear, and a horse cultivator passed frequently between the rows to keep the soil loose and mellow, prevent grass and weeds from starting, and the plants from parching in hot dry weather, as they do when matted together in thick beds where there is no opportunity to loosen the soil except by hand. By frequently stirring the soil, the plants are kept vigorous and healthy, and produce a large crop of fine fruit without manure; while plants crowded thickly in beds without cultivation, require stimulating, and heavy manuring at great expense to produce a crop of medium sized fruit.

NATIVE WINES.

BY F. R. ELLIOTT, CLEVELAND.

WITH the amount of interest and capital now and being invested in grape culture, it may be well for those who are so engaged, as well as for the people who are to drink the wines made therefrom, to inquire a little into what constitutes a Native Wine,—and whether the grape is essential thereto, and, if so, what varieties are best.

At the present time, ere the people have really learned to distinguish pure grape wines, manufactures of all characters of liquids, under the name of native wine, are made and sold.

How long grape growers are themselves going to sit quietly, and see the pillars on which the products of their vineyards are based taken from them, and converted to the sharp use of money-getters, I know not; but it appears to me they should at once expose the manner of manufactures, to-

gether with the names of the makers, and thus in a measure compel the sale of the various decoctions under their own true names.

It may, however, be best to let "every dog have his day," and trust to an intelligent people to ere long detect the true wine from the false; but I fear it will be with wines as with brandies, etc., only a very few out of the millions that will make the discovery. If Rhubarb Pie Plant, or, as now generally sold, "Linnæus Wine Plant," will make as good a wine as the grape, then it is folly to expend time and labor on the grape, because the pie plant can be so much easier grown, and will give just as many gallons to the acre as the operator has skill in admixture of drugs and command of cheap sugar. Again, if boiling down a poor grape wine, flavoring with a mash of half-rotten strawberries, mixing cider, and killing errors by use of acetate of lead, makes as desirable a wine for the sick as pure grape, then certainly it is useless to be particular what kind of grape you grow, only get the strongest growers and at the cheapest price. And, again, if boiling the grape juice, adding sugar and water, with pure spirit to give body, makes one of the best of dry wines, I believe I must emigrate to California if I design to drink it. And, again, if grape juice, cider, water, pure spirit, bi-sulphate of potash, otto of rose, and acetate of lead, with some coloring matter to give a pink tinge, makes a pure wine, then Webster should return to earth and revise his dictionary. And still one more, because in its use the grape is not—if dried raisins, tillia flowers, sugar, water, tartaric acid, yeast and spirit make a pure wine and a healthful beverage, then let us look only to the grape for eating purposes.

How far the advice of Dr. Gall, to mix grape, sugar and water before fermentation, and thus increase the quantity at a decrease of per cent. of acid, may be desirable, is a question, but where the grapes are immature, giving only from fifty-two to sixty-five of sacchrometer with eleven to nine of acid—really material only for good vinegar if kept unmixed—I do not doubt the policy of adding the sugar and water, because, if the fluid is to be drank, the acid in its unmixed state would be injurious to the stomach. In the making of

grape wines in small quantities, by private parties and for their own use, I believe Dr. Gall's practice of adding sugar and water in the tub or vat and before fermentation better than the common one of adding sugar after the wine has fermented and been found too sour to be pleasant.

A pure wine, void of the addition of sugar, sorghum, spirit, etc., made from any grape I have yet seen cultivated here, will not, probably, improve after the second year; because, by that time, its several fermentations have changed all its sugar into alcohol, and decocted its ether or aroma (boquet) to the full.

The addition of sugar on the other hand, if alone and applied to pure grape juice, causes the wine to improve from year to year, and how many years before it perfects, of course depends on the character of the must and the quantity of sugar added.

Some years since I drank of a Clinton wine, made by James Houghton, Esq., of Cleveland, in which sugar had been added to the must, and at the time I drank it was some four years old; and, although not yet perfected, it was the best wine of the character that I had ever seen made from that grape. This past fall I have drank of a new wine made pure from the same (Clinton) grape by George Leick, Esq., of Cleveland, that almost equalled pure wines from Norton's Virginia. This latter, had the maker felt disposed, possessed so much of acid—its great fault—that Dr. Gall's practice might have been adopted without injury, except the lessening its value as a beverage of medicinal effect, or advantageous to the human system—for I hold, nothing in form of drink equals *pure grape* wine in healthful action in the system of man.

Thus far the great objection to all our hardy grapes for pure wine purposes has been the excess of acid contained in them. This, as wine-makers become more and more conversant with the grapes, and the soils on which they are grown, will in great measure be remedied by timing the gathering season, and by selecting the berries. Grapes, as we all know, if gathered immediately after a rain, and before dews are dried off, will weigh more, inasmuch as they contain

a greater per cent. of water than when gathered during a dry time, and at mid-day; and so long as buyers make no discrimination, but pay equal price for the one as the other gathering, growers will continue to gather at the time the grape weighs most, but least valuable for wine purposes.

The past fall Mr. Leick, heretofore named, and, by-the-by, a maker of nearly forty thousand gallons of wine this year, had a great proportion of his Catawba grapes left on the vines until in November, resulting in a wine of about 90 by sacchrometer, and exhibiting only 4 8-10 to 5 per cent. of acid. This, when fermented, will give nearly, if not quite, 11 per cent. of alcohol, and make a wine almost equalling the best Reissling. Such wines would be injured rather than improved by Dr. Gall's method, as a certain amount of acid is requisite to give character and piquancy, and when there is not a superabundance no addition can improve pure grape juice. Wines, it is said, are "*all doctored.*" How far this is true, I know not, but I can see no benefit in doctoring such wines as I have just named. If doctoring has to be done with a wine because of its acidity, it appears to me that rather than practice Dr. Gall's method, I would boil down a part, and, returning it to the cask, create another fermentation, and so mix it. But I am not a wine maker, and what I have written has been rather to draw attention to the subject, and, perhaps, remarks from others, rather than with a thought of conveying any new ideas.

POMOLOGICAL GOSSIP.

GRAPES AND GRAPE CULTURE IN ENGLAND.—The following is a brief account of grape culture as practiced by Mr. Speed, gardener to Sir Ed. Walker, who has taken numerous first class prizes for specimens of his grapes. As it gives some information somewhat new regarding a few varieties, we think it will be read with interest by all grape growers:—

The special object of our visit to Bury Hill was to inspect the vineries and to note all the peculiarities of Mr. Speed's

management; and our preliminary examination of the soil and circumstances natural to the locality was made to assist us in the inquiry as to the existence of any special property in it, or other advantage in the place, that enabled Mr. Speed to grow grapes surpassing in size and general excellence all that had ever before been grown in the Midland Districts. The practical deduction from an analysis of the physical circumstances of the soil is, that there exists the advantages of a poor, dry and wholesome soil, favorable for ordinary grape culture, but affording nothing calculated to induce the extraordinary development which, in Mr. Speed's words, the several varieties he has cultivated have obtained. The range of forcing houses comprises Early Vinery, Peach-house, Vinery, Fig-house, Vinery, Peach-house, Muscat Vinery, Pine-stove. We were too late to see the first vinery, the dimensions of which are 50 feet by 18; but the vigorous and well-ripened wood told of health and fruitfulness, and we could readily believe that bunches of Hamburg grapes were cut from this house weighing six lbs. each. This house contains nine Hamburg and two Muscat vines, planted five years since; the vines completely fill the house; they are pruned on the rod and spur system. The house is heated with a hot-air flue, and has a pit filled with leaf soil, in the centre of the space within it. The border is concreted, and the soil of which it is composed is the top spit of the land of the adjoining pasture, mixed with lime scraps, charred matters, and bone dust. The border is raised from the surface, and is a little over two feet in thickness and sixteen feet wide; it is aerated by three-inch earthen pipes, passing through and through the borders, and entering the house opposite the flue. The border is external, and the vines are brought into the house. We observed that Mr. Speed had washed the whole of the flues and stove work with sulphur. Passing through the early peach house, we reach a second vinery, 50 feet by 25 feet, which had been planted two and a half years with three Lady Downes Seedlings, three Barbarossa, four Muscat of Alexandria, and one Trebbiana. These vines are particularly vigorous, and have reached the back of the house. In cropping, the Barbarossas were restricted to

four bunches each, the bunches averaging five lbs. Mr. Speed thinks the Barbarossa one of the best winter grapes; it was kept by him last year until the 28th of April. The Muscats were allowed to bear six or seven bunches, and would average 2½ to 3 lbs. Lady Downes had eight or nine bunches, and these were very large and handsome. This variety of grape is valued very much at Bury Hill; we never saw vines of the same age bearing a finer or better crop of fruit. To maintain a vigorous and unchecked development from the very moment the vine begins its growth from an eye until its period of rest arrives, is one of the points in Mr. Speed's management; the most vigorous and prolific Barbarossas and Lady Downes were, we were told, struck in the month of January, from eyes, and planted out in April of the years they were planted. Many of our fruit, and even forest trees, injured when young by being cramped and retarded, never make healthy or large trees. We have had an opportunity of observing that a Barbarossa, checked and injured in its early growth, never afterwards grew kindly or well; it may be one reason why this variety enjoys so little favor. The border belonging to this house is not paved; the subsoil being a compact sand. The next vinery is 30 by 15 feet; it is planted with three Muscats, three Hamburgs, two Barbarossas, one Lady Downes, and Alicante. There is an example here showing that it is injudicious to plant a strong growing, robust, hardy vine next to those of less vigorous character; the association of a Barbarossa with a Muscat has been indirectly prejudicial to the latter, while the Hamburg and Muscat agree.

GRAPES IN PENNSYLVANIA AND NEW YORK.—Cultivators would naturally suppose that the earliest grapes would be the most valued in our more northern climate, though the reverse appears to be the fact. At the meeting of the Fruit Growers' Society of Eastern Pennsylvania, after a long discussion on the various grapes, a vote was taken to see whether the views of the society, as to the best grapes, had undergone any change since last year. The following was the result:—

Concord,	25	Elsinboro',	9
Crevelling,	19	Clinton,	9
Hartford Prolific,	16		

Of the Concórd many members spoke; all said that it retained its character as the most popular grape known.

At the meeting of the Fruit Growers of Western New York, after much discussion, a vote was taken upon the best grapes, which was as follows:—

Delaware,	56	Crevelling,	30
Diana,	47	Concord,	29
Iona,	36	Hartford Prolific,	25
Isabella,	32	Rebecca,	19

From this it appears that the Delaware, which is voted the best in New York, did not have a single vote in Pennsylvania; and the Diana, placed second in New York, had no votes in Pennsylvania. Concord, placed the sixth in order in New York, is the first choice in Pennsylvania, and Isabella, the fourth in New York, is not mentioned at all in Pennsylvania. Crevelling appears to stand about the same in both places as does Hartford Prolific.

These are remarkable differences, and we know not how to account for them; we leave grape growers to decide for themselves.

DANA'S HOVEY PEAR.—We notice that some of our contemporaries speak of the Hovey (Dana's) as a pear very little known, although fruited and exhibited yearly for TWELVE OR FOURTEEN YEARS before the Massachusetts Horticultural Society, and reported upon repeatedly during that period. And several cultivators are greatly surprised that it should be recommended as one of the best winter pears, by the Committee who awarded the Greely prizes. It is quite true that it has not fruited throughout the country, but the long time it has been known, and the remarkably fine specimens exhibited for so many years, which have never failed to be of the highest excellence, together with the character, habit, beauty and hardiness of the tree, now very generally introduced into amateur collections, prepossess all in its favor; and those who have not fruited it, but possess a tree, are willing to accept the latter as good evidence that its fruit is all that the Massachusetts cultivators have found it to be after a trial of twelve years.

WILSON'S EARLY BLACKBERRY.—This is a new variety, which has been extensively cultivated in New Jersey, and proved to possess considerable value. It has the habit of ripening its crop mainly together, and is principally over in two weeks, and before the height of blackberries comes on; its whole crop is generally gathered at a few pickings, while the price rules high, and it does not come in competition with any other blackberry, but is ahead of them all in the market, and brings more money. Its earliness is its principal value. With this variety the blackberry season is lengthened two or three weeks, making the period of supplying the market with this fruit nearly three months.

RUSSELL'S PROLIFIC AND BUFFALO STRAWBERRIES.—Nearly or quite all cultivators admit the identity of the Buffalo and McAevoy; but many of them assert that the Russell is distinct. We don't see it. Is it not rather remarkable that both the Russell and Buffalo should be pistillate? However, time will settle this. Mr. Knox very kindly sent us some of *his* Russells, as he informed us it was distinct from the Buffalo. The plants are now in full flower in the greenhouse, but as we have no others to fertilize the flowers we shall not have any fruit. We see no difference between Mr. Knox's plants and those we had of W. S. Carpenter, Esq., who is generally very correct with his plants, and we have not the least reason whatever to doubt he sent us precisely the same Russells as Mr. Knox's.

SHORT COMMENTS ON FRUITS.

BY FRANK.

THE following hints are suggested upon reading your February number:—

ROGERS'S HYBRIDS.—While it is pretty generally conceded that there are some one or more valuable grapes among the numbers sent out, it is to be regretted that so many of them have been let out, for the result is much as it has been with the cherries originated by Dr. Kirtland, and described by Mr.

Elliott, only a few of them have proved of surpassing excellence, while the majority lumber up our books, increase the labors and care while reducing the profits of the nurseryman, and, to a certain extent, detract from the pomological reputation of the parties interested in its first dissemination. Judging from a paragraph in Mr. Elliott's article in this same number, he evidently views the matter in a similar light, as he says, "he hopes no new one will be introduced, unless it have some quality of superiority over sorts already introduced."

To dispute the words of such a man as Mr. Hyde would appear ridiculous, and as I do not thus wish to appear, I will merely ask this question—Is it not possible for a good judge of the grape to decide on one examination, no matter how old the vine, of the fruit, its general value for table or wine purposes, as compared with sorts already growing? I believe it is. I do not believe any better test of the quality of these grapes for general cultivation has been produced this year over that of four or more years since. I have watched the grapes with some interest, and although a society gave a card of recommendation to No. 19, it never appeared to me equal to 4 or 41; and of these two last, No. 4 will be the only one grown at the expiration of ten years more, but that will take the place of the Concord.

No. 3 will make a wine grape, but whether of a quality to equal or surpass others already in extensive cultivation, is a question I doubt.

No. 15 will doubtless continue to be grown both for table and wine, and in ten years, while 4 and 15 will be found generally grown, the remaining numbers will, as now at the North, remain in the hands of amateurs only.

No. 1, in Missouri and farther South, will be grown extensively for wine.

Thus, Mr. Hyde, I have prophesied—I hope no offence.

KIRTLAND RASPBERRY.—In Mr. Elliott's article this berry is spoken of as a favorite and profitable variety, and so I believe the Ohio Pomological Society regard it. Now can it be that spurious ones have been sent out, for some of my friends write me, that, as they have received it, "it is not large, nor a good bearer, and suckers so much as to become a perfect

nuisance in the garden." Too much care cannot be taken in growing and disseminating new sorts; and raspberries or strawberries should never have varieties growing side by side, for even with the best care errors and mixtures will occur.

INSIDE GRAPE BORDERS.—I do not pretend to know as much as I should, nor would I think of giving advice to such men as Dr. Houghton, but it has been my fortune to plan and plant a number of grape houses. I have never used any tile or rock bottom. I have trenched the ground three feet deep, and placed a tile drain in the centre, at a depth of four feet, leading out, of course, for drainage. I have placed my walls just deep enough to secure them from the effect of frost, planted my grapes, and the growers thereafter have been successful in getting fine fruit, by applying liquid manures pretty plentifully during the dormant season, and wetting thoroughly once a week at the commencement of the growing season.

THE BOCCONIAS.

BY THE EDITOR.

AMONG ornamental-foliaged plants the Bocconias hold a high rank, and the accession of a new species from Japan has given a new feature to this highly picturesque and beautiful group.

The old *Macleaya cordata*, now called *Bocconia cordata*, has been some time known in our gardens, though rather rare. It is a hardy perennial from China, growing to the height of 5 or 6 feet, with large, broad, deeply lobed foliage, and has an imposing appearance in the border. Its large leaves are covered with large spikes of red and yellow flowers. Our specimen attained the height of six feet last year, and it proves entirely hardy.

Bocconia frutescens (FIG. 6) is a comparatively new species, though figured in Loddige's Botanical Cabinet many years ago. It is a native of the West Indies, but appears to have been overlooked until reintroduced by the German cultivators, who appear to have discovered its merits, and brought it

before the public. It grows to the height of 8 or 10 feet, with very large, long, deeply lobed leaves; in aspect some-



6. *BOCCONIA FRUTESCENS*.

thing like the *Wigandia*, and, like that plant, requiring to be wintered in the greenhouse, as it will not stand any degree of frost. It will form a grand object for masses of ornamental foliage.

The latest acquisition is the *Bocconia japonica*, (*B. Yokohama*,) or Japan *Bocconia*, (FIG. 7,) recently received from Japan, and now first brought to the notice of cultivators. In gigantic stature and ornamental effect it surpasses either of the others. The German cultivators, from whom we have received the seeds, describe it as a noble plant, attracting unusual admiration in the German gardens. It is allied to the *B. cordata*, but surpasses it in beauty, robust habit, free growth, size, shape, and coloring of the leaves, and showiness of the flower spikes. It has also proved perfectly hardy, requiring no protection in winter, of luxuriant growth, forming a bush five or six feet high, which is decorated, throughout the latter part of summer and autumn, with beautiful pyramidal spikes of flowers, two or three feet or more in length. The fine large leaves, deeply lobed, in the way of an oak leaf, are of an obtuse cordate form, of a sombre green above, and

of a glaucous hue below. As a single object on the lawn, or grouped together, the effect is exquisite. Its hardiness will add to its great value as a decorative object. Our engraving gives a good idea of its general beauty.



7. *BOCCONIA JAPONICA*.

Possibly it may not prove as hardy in our climate as it is in Germany. If this should be so, on trial, it will at least succeed as a half-hardy plant, requiring only the protection of a frame or cellar.

FLORICULTURAL NOTICES.

NOVELTIES FOR 1866.—Quite a large number of novelties are offered by the dealers in seeds, principally from the German collections, where they have been introduced or originated. Among the great quantity too numerous to particularize, we note the following, which appear to be the most remarkable and valuable acquisitions:—

AGROSTEMMA CÆLI ROSA FLORE PLENO.—A new and desirable variety of this old and pretty annual, producing an abundance of double blossoms, about the size of the Portulaca. The distinct foliage and the profusion of blossoms render it a fine plant for masses of dwarf flowering annuals.

CEDRONELLA CANA.—This is a Salvia-like plant, with fragrant foliage, and long spikes of deep purple flowers, retaining the purple hue of the calyxes for a long time after the flowers have fallen. It is a hardy perennial, but flowers abundantly the first year.

DIANTHUS HEDDEWIGI NANA FLORE ALBO PLENO.—A new double variety of the beautiful Japan pink, of a very compact dwarfish habit, producing with great constancy pure double white flowers.

PINK, SARAH HOWARD.—A new hybrid, raised by Mr. Howard of Utica, N. Y., grows about two feet high, of a branching habit, with numerous stems terminated with double white flowers. It flowers abundantly all the autumn and winter, and appears to be a valuable acquisition.

PALAFOXIA HOOKERIANA.—A new Texan annual of great beauty, being much dwarfer and more branching than P. Texana. The flowers are larger, with broader florets, and are produced in large corymbs; color, a bright rosy crimson, with a deeper centre. It flowers abundantly all summer.

RANUNCULUS ASIATICUS SUPERBISSIMUS.—This is a rare and beautiful class of the garden Ranunculus,—supplying the place of the Persian tuberous sorts,—so very beautiful, but difficult to grow. This is grown as a biennial, flowering freely the second year, producing unusually large double varieties, of an unsurpassed brilliancy of colors of all shades, of white, yellow,

rose, crimson, blood red, scarlet, purple, &c. The plants are very vigorous in growth, most profuse bloomers, and have claimed universal admiration. The seeds produce a large majority of double flowers.

SANVITALIA PROCUMBENS FLORE PLENO.—A splendid novelty, and one of the most valuable acquisitions of the year. It forms a very densely branched plant, completely covered with small, perfectly double yellow flowers, about the size of the Pompon Chrysanthemum, and ordinarily much like some of the best yellow-flowered varieties. The flowers are much larger than the single, and are double to the centre. It is more robust in growth than the single, and the mass of flowers stand so closely together that a single plant or small bed is one sheet of blossoms, forming, by the brilliancy of color, a conspicuous object at a great distance. As a bedding plant, it is quite a gem, and a most valuable addition to the number of plants useful for fresh or dried bouquets.

880. *AUBRIETIA CAMPBELLII Hort.* CAMPBELL'S AUBRIETIA.
(Arabideæ.)

A half-hardy perennial; growing 6 inches high; with violet-colored flowers; appearing in summer; increased by seeds and division of the roots; grown in good light soil. *Ill. Hort.*, 1835, pl. 455.

This is a beautiful variety, raised from seeds by Messrs. Sparry & Campbell of Brighton, England, and introduced by Messrs. Henderson of London. This new variety has a very tufted habit, with green foliage, and does not exceed six inches in height; the leaves are large, and neatly dentated; the flowers large, very numerous, and of a violet purple, with a white eye. Grouped in the parterre or border, or planted on rock work with *Arabis albida*, *Draba azoides*, *Arenaria verna* and other plants of the same habit, the mixture of leaves and colors of the flowers produces an elegant effect. It has the merit of blooming early in the spring, and the flowering is prolonged until July. (*Ill. Hort.*, Nov.)

881. *ALLAMANDA HENDERSONII Hort.* HENDERSON'S ALLAMANDA. (Apocynaceæ.) English Guiana.

A stove plant; growing 6 feet high; with yellow flowers; appearing in summer; increased by cuttings; grown in light rich soil. *Ill. Hort.*, 1863, pl. 452.

This is one of the most magnificent of the Allamandas.

The foliage resembles *A. Schottii*, but is larger, and the whole plant is more robust; the flowers are unusually large, four and a half inches in diameter, of the richest golden yellow, with five white spots at the mouth of the tube or throat; the stamens being of an orange shade, which forms a rich contrast with the petals. It was imported from Guiana, by Messrs. Henderson, and sold to Mr. Bull of London, who describes it as the largest flowered and deepest yellow species known. It commences to bloom a little later than the other species, but when it begins to open it blooms constantly into winter. Its habit is good, and the foliage of the richest dark green. The petals have a thickness and substance which none of the others possess. It is a superb plant. (*Ill. Hort.*, Oct.)

882. RHODODENDRON HODGSONI *Hook.* MR. HODGSON'S RHODODENDRON. (*Ericaceæ.*) Himalaya.

A greenhouse shrub; growing 10 feet high; with purplish flowers; appearing in spring; increased by seeds; grown in sandy peat. *Bot. Mag.*, 1866, pl. 5552.

“One of the noblest of the grand series of Rhododendrons that adorn the Eastern Himalaya mountains,” growing at an elevation of 10 to 12,000 feet. The leaves are very large, often 18 inches long, green above and ferruginous beneath. The flowers are large, purplish, and appear in compact heads eight inches across. It flowered last spring in the temperate house at Kew. It is the finest of all the Rhododendrons in foliage. (*Bot. Mag.*, Jan.)

883. SPARAXIS PULCHERRIMA *Hook.* MOST BEAUTIFUL SPARAXIS. (*Iridææ.*) South Africa.

A greenhouse bulb; growing 18 inches high; with crimson purple flowers; appearing in winter; increased by offsets; grown in light rich soil. *Bot. Mag.*, 1866, pl. 5555.

One of the most beautiful of all the fine tribe of Sparaxis, surpassing in stature and distinctness of habit, as well as richness of color, any previous species. It is rather slender in foliage, but the flower stems attain the height of six feet, and are terminated with graceful, drooping flower spikes, from which depend the branchlets, each bearing three to five lovely campanulate blossoms of the richest blood purple color. The whole aspect of the plant is extremely graceful. It is half-hardy, and flowered in the month of October. Probably it

should be treated like the *Gladiolus*, which comes from the same locality. (*Bot. Mag.*, Jan.)

884. *BEGONIA BACCATA* *Hook.* BERRIED-FRUITED BEGONIA.
(*Begoniaceæ.*) Bight of Benin.

A greenhouse plant; growing 3 feet high; with white flowers; appearing in spring; increased by cuttings; grown in light soil. *Bot. Mag.*, 1865, pl. 5554.

A remarkable species of very robust growth, with leaves six to ten inches long, and clusters of large white flowers two inches in diameter, with baccate fruit. It was found at an altitude of 1300 feet. As a large and showy plant, it is one of the best of the *Begonias*. (*Bot. Mag.*, Jan.)

885. *EPIDENDRUM MYRIANTHUM* *Lindl.* MANY-FLOWERED EPIDENDRUM. (*Orchideæ.*) Guatemala.

An orchideous plant; with rosy lilac flowers. *Bot. Mag.*, 1866, pl. 5556.

A charming species, discovered by Mr. Skinner. Growing well in a cool house, and flowering in January, producing very large spikes of lilac-looking blossoms, disposed in a similar manner to that flower. It is a fine species. (*Bot. Mag.*, Jan.)

General Notices.

THE CHRISTMAS ROSE (*Helleborus niger*).—This fine old herbaceous plant may be said to be datum peg of all the year's botany, the first flower of the season, a plant of it now before me being in full bloom this day (Dec. 28th), having been in doors only about a week, and kept in a sitting room. The Christmas Rose is most valuable at this festive season for supplying cut flowers; its large, pure white buds, finely tipped with pink, are borne on very stiff stems, four or five inches in length, and when open the flower is found to consist of five petals, or rather floral leaves, and to measure about three inches across. These leaves are very stiff and showy, consisting of a calyx, pure white inside, and white tipped with pink outside. To make amends for the anomaly, however, there is a corolla of beautiful pale green petals, about fifteen in number, in the form of inverted cones, elegantly cut, and so arranged within the calyx as to give the general appearance of the flower a greenish hue. These little greenish horns are much shorter than the stamens, and are only discovered on close examination. The stamens, say one hundred in number, with orange colored anthers, give a fullness to the flower, and are not unlike the "Glory in the Figure" in the St. Johns wort. In both cases there is a resemblance to

the halo or rays of glory that the ancient painters were in the habit of placing around the heads of the Holy Family.

The architecture of the Christmas Rose is exceedingly ornamental, resembling, as it does, a vase elaborately carved and twisted. The general effect of this lead white flower, with its centre of green and orange, is very striking, its dark-colored leaves setting off the flowers to much advantage. The leaves themselves, like every other portion of this interesting plant, are thick and leathery, and at the time when the flowers appear are at least one year older than the blossoms, whose delicate organization they are destined to defend. Opening into beauty, as the plant does, at such an inclement season as Christmas in England generally is, some natural precaution seems necessary, and we find that this is handsomely provided, for upon a stiff footstalk are arranged some nine or ten leaves, springing from a common centre, like the ground roof of some old church, thereby forming a pent house, eight or nine inches in diameter, over the blossom buds below, whilst at the same time sun and air have free access to them. The leaf, when detached from the plant, is in appearance and character quite a miniature palm, and the whole plant, although only a couple of hand breadths in length, has so much individuality about it, that it could not fail to attract notice on that account alone.

If the Christmas Rose were to appear in June, with its fine white petals, in some thorny jungle, elbowing itself into notice like the bramble, its flower might pass muster among those of the Dog Rose, where the five pink tipped white petals are so well known to prevail; but when we see the order of nature so strangely reversed, that this tiny evergreen herb lets the spring, summer, and even the autumn pass by, and flowers in the very depths of winter, we need not wonder at its being so highly prized. About a week before Christmas, it may be potted, and placed in a cottage window to bloom, to effect which no costly arrangement is needed; a disabled basin, with no hole in the bottom, will hold earth enough for this hardy herbaceous plant, and to those who may have to purchase the plant it will not cost more than sixpence; the clumsiest tyro, too, that ever planted kale with a dibber will be gardener enough to do the work, for such is the determined character of the plant to thrive under difficulties, that no one need despair of having the Christmas Rose in full bloom at Christmas.

Nothing could compensate us for the loss of Christmas Festivities. It is thoroughly English to have "mirth and jollitie" at this season, and the bard wrote well when he said:

"A Christmas gambol oft would cheer
The poor man's heart through half the year."

There is great joy in an atmosphere of flowers, and there is no end to their beauty, so that what has often been applied to pictures may truly be said of them:

"A thing of beauty is a joy forever."

—(*Gard. Chron.*)

[We quite agree with the writer. The Christmas Rose has flowered with us in the open ground at Christmas, merely covered with a hand glass, and surrounded with snow.—ED.]

SICILIAN MODE OF EATING STRAWBERRIES.—Throughout Sicily it is the custom to eat strawberries along with sugar and the juice of an orange or two. The strawberries, a small kind, come to table without their stalks, are crushed with white powdered sugar, and the juice of an orange is squeezed over them. The result is a most fragrant and agreeable compound, much superior, in my opinion, to strawberries and cream. Indeed, I think it is all but worth while to make a journey to Sicily to be initiated into this mode of eating strawberries.—(*Gard. Chron.*)

ERICA TETRALIX AN AMERICAN PLANT.—M. Reichenbach, Jr., states that the *E. tetralix* is a native of Surinam, where it was found by Heigelt, a German collector, and sent to Dresden. Prof. Reichenbach has a specimen in his own herbarium. Thus it appears we have two species of heath natives of America, *E. vulgaris* and *E. tetralix*.

DOUBLE GLAZING.—This subject has been much discussed in English papers. Its merits have been duly set forth, and it appears especially desirable in our colder climate. The following easy mode of double glazing a new house, or one already built, is given by a correspondent of the *Gardener's Chronicle*: If any one is building a house, with deep sash bars or rafters, it would be easy to double glaze. Instead of the lower edges being "chamfered" off, let there be a groove made a little wider than the thickness of the glass to be used, about half an inch from the under side of the bars or rafters. This groove should be made the whole length, and when the outer glazing is done, a piece of wood on the under side of the rafter, as near the ridge as possible, should be cut out the length of one of the squares. This will of course allow a pane of glass to be slipped in and pushed down to the bottom, then another, and so on to the top, edge to edge, and the top one might be kept in its place by nailing on the little slips cut out at first. Those who have such houses already built could glaze the under side by nailing on two very small slips of wood to form the groove. On this plan a good sized house could be glazed on the under side for £6 or £7. The glass could, if necessary, be taken out once or twice a year, washed and replaced in a few hours, and the cost at first would not be more than a perishable woolen cloth and roller. Double glazing, it is believed, would save half the quantity of fuel usually required to keep up the proper temperature of the house in our cold winters, with the temperature frequently at zero or near it.—ED.

MANURING LAWNS.—Failing rich compost, or thoroughly decayed dung, sow Peruvian guano over the lawn, during showery weather in April, at the rate of 2 cwt. per acre, and give another dressing in the first wet weather in June, applying it just before rain. Let the guano be sifted through a moderately fine sieve. Peruvian guano is best, but the ammoniated guano is excellent.

Gossip of the Month.

CATALOGUES, BOOKS, &c., RECEIVED.—Every Saturday, a weekly periodical of selected Literature, published by Ticknor & Fields every Saturday. Filled with choice and selected reading.

J. M. Thorburn & Co.'s annual Descriptive Catalogue of Flower Seeds, &c., with a list of French Hybrid Gladiolus and other Spring Bulbous Roots. J. M. Thorburn & Co. N. Y. 1866.

J. W. Bailey & Co.'s semi annual Catalogue and Price List of Grape Vines. Plattsburg, Clinton Co., N. Y. With an engraving of the Adirondac Grape. 1866.

Hoveys' Illustrated Guide to the Flower and Vegetable Garden: 130 pages, 60 engravings, and a colored plate. Hovey & Co., Boston. 1866.

Amateur Cultivator's Guide to the Flower and Kitchen Garden: Washburn & Co., Horticultural Hall, Boston: 130 pages, 60 engravings, and a colored plate. 1866.

Frost & Co.'s Descriptive Catalogue of Flower Seeds, 1866. Frost & Co. Rochester, N. Y.

Reid's Nurseries, Elizabeth, N. J. Wholesale Price List for the Spring of 1866, of Fruit Trees, &c. D. D. Buchanan.

Transactions of the Hampshire, Franklin and Hampden Agricultural Society, for the year 1865, with the Address of Daniel Needham.

Proceedings of the West Jersey Fruit Growers' Association for 1865.

Catalogue No. 3, of Ornamental Trees and Shrubs, Vines, Roses, &c., cultivated and for sale by Ed. J. Evans & Co., York, Pa. 1866.

Hoopes, Brother & Thomas's Catalogues, Nos. 1 and 2, Ornamental and Fruit Department, West Chester, Pa. 1866.

Report of the House Committee on Agriculture of the State of New Jersey, for the year 1866. By Dr. J. P. Trimble.

Pomona Garden and Nursery Catalogue of Strawberries, Raspberries, Fruit Trees, Vines, &c., 1866. William Parry, Cinnaminson, Burlington Co., N. J.

AMERICAN POMOLOGICAL SOCIETY.—The next meeting of this Society will be held in St. Louis, Mo., on the 4th of September next, when, it is expected, it will prove one of the most interesting meetings of the Association.

FRUIT PRESERVING.—Prof. S. R. Beckwith, of Cleveland, Ohio, has made some improvements on Nyce's Fruit House, for which he has secured patents, and is about to introduce them into our Eastern cities. We should like to see them fairly tried.

Societies.

FRUIT GROWERS', OF WESTERN NEW YORK.

The annual meeting of this Society was held at Corinthian Hall, Rochester, N. Y., on Wednesday, Jan. 24.

Mr. Barry, the President, called the meeting to order, and in a brief address alluded to the presence of several distinguished gentlemen, among whom was the Hon. M. P. Wilder of Massachusetts, President of the American Pomological Society, and the Father of American Pomology. The meeting then proceeded to business, and elected the following officers for 1866:—

President—H. E. Hooker, Rochester.

Vice Presidents—P. Barry, Rochester; T. G. Yeomans, Walworth, Wayne Co.; D. W. Beadle, St. Catherines, C. W.

Secretary and Treasurer—James Vick, Rochester.

Executive Committee—Wm. Smith, Geneva; E. A. Frost, Rochester; J. W. Helmer, Lockport; Hugh D. Brooks, Wyoming; C. W. Seeley, Rochester.

After a short intermission, the Society assembled in the afternoon and proceeded to business. A committee appointed to prepare the order of business reported a list of subjects for discussion, among which were the following:—

1. Do the past results or profits in pear growing warrant the planting of large orchards?
2. What varieties of winter pears are hardy and best adapted to cultivation: first, for amateurs; second, for market?

The discussion of the first question was then commenced by Mr. Yeomans of Walworth, who said all of his trees were dwarfs, and he had no experience in the culture of standards. He saw nothing to discourage the raising of this fruit. In many localities he understood that heavy losses had been sustained from the pear tree blight;—with him he had seen nothing of it. He thought that there was as much loss with other kinds of fruit. He had not lost in the culture of pears one per cent. of them from all causes. His dwarfs were at first of the White Doyenne or Virgalieu, but they cracked so badly he budded his trees with the Duchess d'Angouleme. His fruit was all that could be expected from healthy trees, and he thought it was a good investment. With other kinds he had not been so successful. He never budded the Bartlett directly on the quince. Those that he double-worked were vigorous and hardy, and he would not recommend budding the Bartlett directly on the quince without being double-worked.

Mr. Oliver Chapin said, he planted about 2000 trees, standards, about twelve years since. Four years afterwards they were budded with the Bartlett. He had not received a shilling for that ten acres, nor was there a tree upon it he considered worth anything. His trees had not received such

care as Mr. Yeomans. His soil is what is termed gravelly loam—good wheat land.

Mr. Burtis of Rochester said the Duchess d'Angouleme had done well with him. The trees wanted careful attendance. When the blight first appears, put the knife to the limb. He could not discourage the raising of pears.

Mr. Barry asked Mr. Chapin if there were not pear orchards in his neighborhood that were good?

Mr. Chapin did know one or two, and one of those was on stiffer soil than his—on a side hill, and not much exposed to the wind.

Mr. L. F. Allen, of Buffalo, was invited to occupy the chair during the absence of the President.

Mr. W. P. Townsend, of Lockport, said he had commenced with a large number of varieties, but had gradually reduced the number to about ten or twelve. For the first ten years they paid well; but for the last five years they had been badly injured by blight. The White Doyenne and Louise Bonne de Jersey were badly injured, while the Duchess d'Angouleme had mostly escaped. He thought there were very few localities in which pear culture could be made profitable. He recommended the Duchess d'Angouleme on the quince, Bartlett and Seckel. His soil was a sandy loam, running down to clay—"hard pan." His opinion was that only in a few favored localities could the pear be raised with profit on a large scale.

Mr. Barry said, that if it were not for the blight the question as to profit would not be asked. As long as summer pears brought \$8 to \$10 a barrel, and later pears \$12 to \$20, nothing could be more profitable. Everything that was raised had its enemies; there are losses in every department of industry; the pear had the advantage of bearing every year, while apples bore only every other year, or less frequently. Pear cultivators, whose orchards had been unsuccessful, were those who became discouraged at an early day. Even under present management pear culture was the most lucrative business which could be followed. Many persons, when the blight attacked their trees, abandoned them altogether, and did not attempt to remove the blighted portions of the tree. A fruit grower should watch his trees, and on the first symptom of blight lop off the affected parts, and if necessary, uproot the tree altogether, supplying its place with another. Those who neglected their orchards had no right to call themselves fruit growers. Pears need not command more than one fourth their present price in order to be a profitable crop; he had this season sold winter pears for \$30 per barrel, and got his pay for them.

Mr. Chapin asked whether the pear blight was less frequent under high culture.

Mr. Barry said he thought moderate culture was best, not attempting to stimulate growth by heavy manuring.

Mr. Townsend, of Lockport, said that an excessive growth of the tree was always followed within two or three years by blight.

Mr. Brooks, of Wyoming, said he thought it was largely a question of climate and soil. He would not advise any one to go into the business

very extensively without first testing it on a small scale, to see whether the soil was fitted for it.

Mr. J. Fisher, of Batavia, thought if any one went into the business extensively, with the purpose of making profit out of them, he would be very egregiously mistaken. He had planted three hundred trees, and given them the best culture, but he had entirely failed. His experience was most discouraging; nevertheless he advised every man to plant some pears for his own use, but not to expect any profit from them.

Mr. Burtis thought very much depended on the manner of planting the trees; they should be planted with a bed of clay fully six inches deep under each one. If the trees were planted on light or sandy soil, they would almost certainly be destroyed.

Dr. Sylvester spoke in favor of the Seckel. He had planted forty trees, and they had done well, having last year eleven barrels. These were standard trees; he had also about two hundred trees on quince stocks, all doing well.

Levi A. Ward, of Rochester, said he was not a large cultivator of pears. He cultivated about one hundred pear trees, and had done so for about twenty years. He had not compared one year with another in regard to the blight, but on the average the loss was about five per cent. He had been amply repaid for his culture of the pear. He thought of the Duchess pear there would be an overplus in a few years, if pear culture succeeded as he trusted it would. The winter pears were too much neglected. He raised always large crops of the Louise Bonne de Jersey—from one to one and a half bushels to the tree.

Mr. W. Brown Smith, of Syracuse, thought great mistakes were made in the selection of soil for pear orchards; he knew pears to do well on clay soil; he did not believe in manuring too high; wheat land was good enough for pears.

Mr. Wilder said everything depended on the selection of the right kind of soil and location. In the vicinity of Boston no difficulty was found in cultivating the pear, notwithstanding the poorness of the soil compared with yours. The best success he had observed in pear raising was in clay soil.

Mr. Olmsted, of Le Roy, said their trees blighted at the rate of twenty-five per cent. His soil was a sandy and gravelly loam—dry land. He considered pear raising a precarious business.

Mr. Allen inquired whether any one could point out a pear orchard thirty years old, in good bearing condition.

Mr. Wilder said that the first trees planted were imported from Europe, and injured by transportation; but he would say that nine tenths of the trees he got from the nursery were now living and in good condition.

Mr. Ward said his best crops were borne on trees from twelve to fifteen years old.

Mr. Coddington, of Rochester, referred to some pear trees planted out sixty or seventy years ago, in Ontario County, where he formerly lived; he knew them as old trees when he was a mere boy; they are yet in good condition

and have borne crops worth ten times as much as from the same number of apple trees.

Mr. Brooks asked Mr. Barry how often he would renew a pear tree, if they died.

Mr. Barry said that if a tree had died he would first remove the soil and replace it with new; he did not believe the old soil was good for the trees.

Mr. Wilder confirmed this opinion.

The second question was then taken up—"What varieties of Winter pears are hardy and best adapted to cultivation?"

Mr. Ward said that what was true in one locality might not be true in another. He would choose—1. Winter Nelis; 2. Josephine de Malines; 3. Lawrence; 4. Easter Beurre; 5. Doyenne d'Alencon. He did not consider the Vicar of Winkfield a good table pear; it was good for cooking, but for eating was indifferent.

John J. Thomas, of Union Springs, would add the name of Jones's Seedling. He worked the Winter Nelis at standard height; he did not know another pear, taking everything into consideration, its equal.

Mr. Townsend, of Lockport, also added his testimony in favor of Jones's Seedling.

Mr. Sylvester, of Lyons, said Dana's Hovey was an excellent winter pear; he had eaten one the last week in December, 1865, that was very fine.

Mr. Wilder urged the necessity of thinning out the Winter Nelis early in the season; the remaining specimens would be much better in consequence. The same remark would apply to other pears. The Doyenne d'Alencon was a very excellent winter pear, hardy, an abundant bearer, and a good ripener. The Beurre d'Anjou was also a valuable pear; he made it a winter pear, and if he could have only one variety, that would be the one. Twenty-five years ago, he had been laughed at for saying he preferred the Vicar of Winkfield if he could have but one variety. Now he would amend that by substituting Beurre d'Anjou. The secret of keeping winter pears is to keep them below the temperature which will ferment the juices and bring them to maturity. His winter-pears are left on the trees as long as possible. But, after all, Mr. Wilder doubted the expediency of raising winter pears extensively.

Mr. Yeomans said he was keeping several varieties of winter pears in a room, in open boxes.

Mr. Barry mentioned the Beurre Gris d'Hiver as a fine pear.

We shall refer to other subjects discussed in another number.

AMERICAN POMOLOGICAL.

In conformity with a resolution adopted at the last meeting of this National Association, the undersigned give notice, that its Eleventh Session will commence in the city of St. Louis, Mo., on Tuesday, Sept. 4th, 1866, at 11 o'clock, A. M., at Mercantile Library Hall, and will continue several days. All Horticultural, Pomological, Agricultural and other kindred institutions in the United States and British Provinces are invited to send delegations, as large as they may deem expedient; and all other persons

interested in the cultivation of fruits are invited to be present and take seats in the Convention.

And now that the rainbow of peace has again spanned the arch of our Union—now that our southern brethren, after a painful separation of years, are again to be united with us in full fellowship and communion—now that our meeting is to be held for the first time on the “Father of Waters,” in the Great West,—we invite all the States and Territories to be present, by delegation, that the amicable and social relations which have heretofore existed between the members of the Society may be fostered and perpetuated, and the result of its deliberations, so beneficial to the country at large, be generally and widely diffused.

Among the prominent subjects which will come before the Society at this session, will be that of the revision of the Society’s Catalogue of Fruits. The Special Committee appointed for this purpose are now, with the various State and Local Committees, actively engaged in collecting such information as will aid in determining what varieties are best adapted to the different sections and districts of our country, and this information, in the form of reports, will be submitted to the action of the Convention. In compliance with a resolution passed at the last session of the Society, the several State Pomological and Horticultural Associations are requested to compile lists for their own States or Districts, and forward them at as early a day as possible to P. Barry, of Rochester, N. Y., chairman of the Committee on the Revision of the Catalogue.

Members and delegates are requested to contribute specimens of the fruits of their respective districts, and to communicate in regard to them whatever may aid in promoting the objects of the Society and the science of American Pomology. Each contributor is requested to come prepared with a complete list of his collection, and to present the same with his fruits, that a report of all the varieties entered may be submitted to the meeting as soon as practicable.

All persons desirous of becoming members can remit the admission fee to Thomas P. James, Esq., Treasurer, Philadelphia, who will furnish them with Transactions of the Society. Life membership, \$10; biennial, \$2.

Packages of fruits, with the name of the contributor, may be addressed as follows: “American Pomological Society,” care of C. M. Saxton, corner Fifth and Walnut Streets, St. Louis, Mo.

JAMES VICK, Sec’y.

M. P. WILDER, President.

Horticultural Operations

FOR APRIL.

FRUIT DEPARTMENT.

THE month of March has been cold and variable, with some warm weather, but, in the main, cold and winterish. As we write, the snow covers the ground.

GRAPE VINES will now be growing rapidly in the grapery, and those which started last month will be in bloom: those breaking later will be in bud and in flower during April. See that the vines are tied up firmly to the trellis, and that all the superfluous shoots are rubbed off. Secure the laterals as they grow. Discontinue syringing as the vines come into bloom, but continue to damp down the house two or three times a day, so as to maintain a warm, humid atmosphere. Give air in good weather, and as the weather becomes warmer, fork over the border gently, that the roots may be benefited by genial rains. Cold houses should now have attention. Uncover the vines and tie up the canes, airing the house to prevent too sudden a growth. As the weather becomes warmer, commence syringing and give less air, until the vines are beginning to break freely. Vines in the open air should be uncovered as soon as the weather is good, and tied up to the trellis when all danger of frost is past. Now is the time to prune if not already done.

ORCHARD HOUSES should now be kept warmer in order to encourage an early growth. Syringe and water the trees so as to ensure a strong development of the blossoms.

GRAFTING should be commenced at once, beginning with the cherries.

TREES OF ALL KINDS should be transplanted.

STRAWBERRY BEDS should be uncovered, and, as soon as the weather will admit, they should be cleared of all weeds. New beds should have the surface lightly stirred with the hoe. Prepare ground for planting next month.

PRUNING should be continued during the month of April.

FIGS, PEACH and other fruit trees, wintered in the cellar, should be placed in the open air, in a sheltered place, as soon as the weather will admit.

GOOSEBERRIES AND CURRANTS should be well pruned in.

FLOWER DEPARTMENT.

With the advent of April the work of the garden increases, and as the season is not likely to be very early, a great deal of work will be crowded into a few weeks. Preparations should be made for completing everything as rapidly as possible.

CAMELIAS will now be making their new growth, and will require more water and frequent syringing, as well as shading from the hot sun. A higher temperature should be kept for a month or so. Ill formed, straggling plants should be headed in. An occasional watering with liquid manure will benefit the plants.

AZALEAS will soon be in their prime, especially such plants as have been kept in a cool house. Shade from the hot sun as they come into flower, and water more freely, syringing until the flower buds expand. Such plants as have done flowering should be headed in to make handsome specimens, and young stock may be repotted.

PELARGONIUMS will now begin to make a fine growth, and the earlier sorts commence to bloom; tie out the branches of such as will bloom in

May. Keep the plants turned round at least every week, and give plenty of room. Give plenty of air, and syringe lightly once or twice a week. Pinch in and repot young vigorous growing plants intended for specimens next year.

HEATHS AND EPACRIS, done flowering, should be well headed in and removed to a cool frame until the weather is warm enough for planting in the open ground.

CALADIUMS, growing freely, should be repotted; young plants, not starting well, should be placed in a good hotbed. Use light rich soil.

SEEDS of various annuals should now be sown, if not already done. Balsams, Asters, Zinnias, Petunias, and similar showy plants, will bloom much earlier and stronger if raised early, and hardened off in frames before planting.

TUBEROSES should be planted for a succession of bloom.

BEDDING PLANTS, of all kinds, should be removed to a frame, where they can be sheltered from the cold at night and the sashes removed during the day to prepare them for out door planting.

ACHIMENES AND GLOXINIAS should be started into growth, if not already done.

CHRYSANTHEMUMS should be propagated from cuttings, or by dividing the roots.

FLOWER GARDEN AND SHRUBBERY.

As soon as the weather is favorable the first work should be to roll the lawn and rake the walks. No lawn can be kept in good condition without frequent and thorough rolling. If any top-dressing is needed, use a light sprinkling of guano. Prune the shrubbery into good shape, and prepare the ground for early planting.

HYACINTH AND TULIP BEDS should be uncovered, and the surface should be lightly stirred.

JAPAN AND OTHER LILIES should also be uncovered, and as soon as the shoots appear the surface of the soil should be stirred and cleaned.

DAHLIAS should be started in frames or hotbeds for early planting.

COLD FRAMES will need attention: open and air them every good day: pick off decaying leaves, and see that the plants are in good order for planting out.

PANSIES in frames should be well aired.

DAISIES in frames should be protected from frosty nights, but have an abundance of air during the day.

HERBACEOUS PLANTS of all kinds may be transplanted this month.

SOW MIGNONETTE, CANDYTUFT, ROCKET LARKSPUR, and other hardy annuals in the open border.

HOLLYHOCKS in frames may be removed to the open ground in a good prepared bed.

CARNATIONS AND PICOTEES, wintered in frames, should be planted out the last of the month.

GRAPE CULTURE IN NEW YORK.

It has been the general impression that grape culture, on anything like an extensive scale, either for producing fruit for the market or for wine, was confined chiefly to Ohio and the vicinity of Cincinnati, from whence it has extended south and west. We had this impression, and were not aware that many plantations, calculated by the acre, existed in New York. It appears, however, from an Essay prepared for the New York State Agricultural Society and published in their Transactions for 1865, and also in pamphlet form, that grapes in very large quantity are raised in the western part of the state, and with marked success.

This Essay, which received the premium of the Society, and which the Committee say has "a practical, a suggestive and an historical value," containing much valuable information upon grape culture,—as well as general intelligence in reference to the climate and soil of the best grape growing regions in France, Germany, and California,—was prepared, though unsolicited, by Mr. G. Denniston of Prattsburg, N. Y., who appears to have been a careful observer, and well informed upon the subject of which he has written. It was deservedly awarded the highest premium offered by the Society.

The locality where so much has been accomplished comprises the towns of Urbana and Pulteney, situated on Crooked Lake, in Steuben County, and includes the village of Hammondsport, the residence of Judge Larrowe and others, who have been highly successful in the culture of the grape. Upwards of 400 acres were in full bearing in 1864, and about 400 additional acres planted with young vines. The average yield per acre is about *three* tons, and the aggregate crop for 1864 fell a little below that figure.

Locality is considered by Mr. Denniston as particularly important in the successful cultivation of the grape; and the formation of the country in Pleasant Valley and along the

west shore of Crooked Lake, furnish admirable sites for vineyards. The hills to the westward afford fine positions on their southern slopes, and they are being wholly planted almost to their summits, and now present the terraced aspect familiar to those who have seen the Cincinnati plantations. The Essay is accompanied with maps, giving the formation of the country, and showing the water-runs or streams which find their way through the base of the mountain slopes to the lake. Here, sheltered from the rigors and severity of the winter, which prevails at the summits of the hills, snow drifts are scarcely seen, and cold blasts are hardly felt; and it is in such secluded nooks that the grape delights to grow and yield its abundant harvest.

There can be no doubt of the greater adaptation of some localities to the growth of the grape than others, and where these are found they should be made available. But as it is not in the power of cultivators always to have a choice of location or position, but to make the best of what they have, it is well to know what constitutes the most favorable conditions, and imitate them as far as possible by proper protection of buildings, plantations of trees, hedges, &c. If Mr. Denniston does not supply all this information, the facts which he brings forward in reference to the growth of the grape in Steuben County lead the cultivator to infer these are important and essential artificial aids where nature has not supplied us with the home of the vine.

We have been so much interested in the perusal of the Essay that we have thought a brief notice of some of the remarks of the writer, applicable to the growth of the grape everywhere, would be read with much satisfaction, now that grape culture is attracting so large a share of attention.

Mr. Denniston, after alluding to the little attention given in his section of the state to the culture of the vine previous to 1852, and the current opinion that our climate was unfavorable to the production of grapes that were of any value as an article of food, or for the manufacture of wine, proceeds to present some excellent suggestions as to our climate in comparison with the grape-growing districts of other countries, as follows:—

We had extremely imperfect ideas of the capacity of our climate for the growth of the vine, as well, in every respect, for its requirements. We did not understand that "*temperature*" is not a precise guide, but that other conditions also govern; and although our climate exceeds in *humidity* the vine-growing districts of Europe, yet, our atmosphere is drier as a mean, and is certainly more dry and elastic.

This alternation between humidity and dryness is probably the reason that the European grape will not flourish in our climate, and consequently these varieties are very much restricted in our country, particularly east of the Rocky mountains.

It is known that in Europe the cultivation of the vine has been pushed to the extreme limits of climatic capacity, and in sheltered valleys it is grown successfully far north of other places too cold and variable for its production.

M. Blondeau, writing on the subject of grape culture says: "The determination of the conditions of climate in which the culture of the vine is possible, is of practical as well as theoretical interest. Knowing that any particular locality has long been devoted to this culture we are able to fix the mean temperature thereof, and by studying the circumstances prejudicial to the development of the vine, avoid the failures so often experienced by those who undertake this culture where it is impossible."

"The grape requires four months, or one hundred and twenty days, to come to maturity; we can calculate the aggregate of temperature required to perfect its growth. Bordeaux, in France, being in latitude $44^{\circ} 50'$, has a mean temperature in spring of 56° , in summer of 71° , in autumn of 58° ; mean for spring, summer and autumn of $62^{\circ} 40'$. And, as Bordeaux is near the centre of the wine districts of France, a data is furnished, other things being equal, of the climate required for the cultivation of the vine."

It is an interesting study to investigate the particular features of the various vine-growing districts in Europe and the United States, and to notice that neither latitude, nor elevation, nor the amount of rain falling governs, but that other causes combine to render the cultivation certain and

profitable. Also, to notice that the range of temperature is not so much controlling as we are inclined to believe. The grapes of Astrachan are said to be equal to the best of Italy, and the range of temperature there is more extreme than in many places of our own country.

Astrachan is in latitude $46^{\circ} 21'$, on a level with the sea; has a mean temperature in spring of $52^{\circ} 6'$, in summer of $75^{\circ} 9'$, in autumn of $52^{\circ} 4'$, in winter $19^{\circ} 2'$; making a mean for the year 50° .

California is undoubtedly the most favorable for grape culture of any part of the United States. The vineyards there produce ordinarily twice as much as the vineyards of any other grape district. The crop never fails, as it does in every other country. The soil is a deep, sandy loam, and in some places a rich, black loam and a gravelly clay. The climate is dry and uniform, which insures the grape from rot or mildew.

The mean temperature of California for January is $44^{\circ} 2'$, for February $45^{\circ} 4'$, for March $53^{\circ} 4'$, for April $54^{\circ} 8'$, for May $62^{\circ} 7'$, for June $69^{\circ} 1'$, for July $69^{\circ} 4'$, for August $71^{\circ} 3'$, for September $71^{\circ} 1'$, for October $65^{\circ} 4'$, for November $54^{\circ} 9'$, for December $46^{\circ} 2'$; the spring average being $56^{\circ} 9'$, the summer $69^{\circ} 9'$, autumn $63^{\circ} 8'$.

A writer on the meteorological conditions necessary to the production of grape wine of the best quality, says: "In addition to a summer and an autumn sufficiently hot, it is indispensable that at a given period—that which follows the appearance of the seeds—there should be a month, the mean temperature of which does not fall below $66^{\circ} 2'$, Fahrenheit."

September and October in California has a mean temperature of $68^{\circ} 2'$, maturing the grape with sufficient sugar to make the fruit luscious and the wine rich and of the very best quality; consequently, the wines of that state come nearer to the wines of Italy than any produced upon the American continent.

The soil of the grape-growing district in the county of Steuben is peculiarly adapted to the cultivation of the vine; the geological formation being of the Chemung sandstones and shales, disintegrated to a great depth and full of crevices,

through which the water can pass, indicates a soil free from the action of surface water, and consequently warm and loose. Another peculiarity marks the district in this, that deep ravines pass from the hill tops into the valley, making a perfect drainage of the intervening space, and an exposure the most favorable to secure a high temperature in summer and autumn. Many of the headlands present a surface at right angles with the sun's rays, and receive a temperature much higher than their latitude and elevation would otherwise warrant.

This district being on the slope of the west shore of the Crooked lake, a sheet of water of great depth and of unusual purity, which remains unfrozen the most of the winter season, it softens the extreme cold, protects the incipient vegetation of spring, and prolongs the growing season in autumn, by preventing the recurrence of early frosts. The effect of the waters of the lake is that of an equalizing influence upon the temperature, rendering it less liable to sudden changes and more adapted to the growth and maturity of the finer varieties of grapes and fruit.

The mean temperature of the period during which the growth and maturation of the grape takes place, exercises a remarkable influence, and the more uniform the temperature, at the requisite figure, the more certain will the grape mature to the requisite perfection.

It is known that the recurrence of frosts in September and the beginning of October, will injure the grape so as to render it unfit for the table, and the wine made scarcely drinkable. It is very essential that the ripening process of the grape be not retarded or interrupted by a low temperature or the occurrence of early frosts.

Now these are considerations worthy of attention, for they establish the fact, that in valleys or cold localities, where the temperature of July is less than 66° (average) the crop is unsafe. The progress of vineyard culture at Pleasant Valley is then sketched as follows:—

The first attempt to plant a vineyard was made by Andrew Reisinger, a German, who by profession was a vine-dresser,

being brought up to the business in Germany. He came to Harmonyville, in the town of Pulteney, in 1853, and selected a bluff, upon which he planted about two acres, and succeeded in producing good crops of Isabellas and Catawbas. He trenched the soil, and cultivated the vine as in his native country, not allowing it to form large branches, but trimmed it down, so as to have the bearing canes near the ground, the fruit receiving the benefit of the reflected rays of the sun and the heat radiated from the soil. He trained his vines to stakes, and did not permit them to grow more than four feet in height; and where they were trellised they were kept of the uniform height of from three to four feet, in the form of a low trellis.

This vineyard is now owned and occupied by D. S. Wagener, Esq., of Pulteney; and having been enlarged, is in fine bearing condition. The grapes of the present year (1864) have been a full crop, and of a very fine flavor.

The scenery adjacent to this vineyard on the south is more than rural, it is picturesque. A deep ravine cuts the hill asunder to the depth of more than one hundred feet, through which roars the waters passing from the hills. In summer it is the babbling brook; in spring, and time of flood, the fearful torrent, carrying rocks, trees and rubbish down to the flats below. It is in character with many other places on the lake shore.

South of Mr. Wagener's is the vineyard planted by C. C. Baldwin, Esq. It contains about one acre, and is in fine bearing condition. Mr. Baldwin has lately sold it, together with about ten acres of land and a small cottage house, for two thousand dollars, which the purchaser deems a good bargain. Mr. Charles Wixam is the present owner.

Mr. Prentice has a fine vineyard south of this, on the slope of the hill, towards the lake shore. He has been a successful cultivator of the grape for many years, and a ramble through his grounds gives one an idea of the pleasure arising from a view of beautiful scenery and of rural taste. These vineyards all repay their proprietors for all the care and the labor they bestow.

The first vineyards started in Pleasant Valley proper was in 1855, by Hon. Jacob Larrowe and Orlando Shepard, each of whom planted about half an acre, on the slope of hills southwest from Hammondsport. They procured their vines (Isabellas and Catawbas) from Avon, in Livingston County. The soil selected for their vineyards was of a character peculiarly adapted to the growth of the vine, being dry, porous and of extremely easy tillage. It is a gravelly loam with a substrata of shale, the debris of which is largely incorporated in the soil. In this soil the roots of the vine take deep hold, and the canes grow with great luxuriance. They trained their vines to trellis, allowing them to grow to the height of about six feet, in rows about eight feet apart. They kept the ground free from grass and weeds, and usually well tilled. Sometimes they planted beans between the rows, which produced enough to compensate for the dressing. These two vineyards were so productive as to induce others to turn their attention to the business, and thence arose a department of productive industry heretofore unknown in those parts. Finding that their vineyards were successful in the production of crops, both Shepard and Larrowe set out two or three acres more in 1858, and their success induced others to embark in the business and thus extend the area of grape culture throughout the valley.

Clark Ball, Esq., in connection with Judge McMaster, set out about six acres, on the bluff, adjacent to the village of Hammondsport. Grattan H. Wheeler purchased the Decker farm, south of Judge Larrowe's, and planted four acres upon the gravelly ridge northeast of his residence. Charles D. Champlin set out one acre upon the rise west of the wine cellar, where the slope is to the southeast. Timothy M. Younglove set out one acre upon a warm bluff, where the sun's rays had full force and the bleak winds were shut out. S. B. Fairchild planted his vineyard upon the lake shore, just north of Hammondsport, in terraced rows, giving a fine, warm exposure, where the fruit matured finely, and the yield was abundant. His vineyard occupied one acre, which has since been much enlarged. Mr. Edwin P. Smith also set out

two acres upon the rise adjacent to the village, south of the stone mill, and succeeded in raising fine grapes.

Aaron Y. Baker, having examined the vineyards of Cincinnati and of Kelly's Island, opposite the city of Sandusky, in Ohio, purchased cuttings at the latter place and brought them home with him. A stimulus was thus presented to the citizens of the valley, who entered with renewed zeal into the business of cultivating the grape. Mr. Baker planted his vineyard southwest of the wine cellar, where the hills break towards the west, affording a fine exposure to the south, and securing quite or more than an average from year to year. His crop, in 1862, yielded over 9,000 pounds to the acre, while the average throughout the valley is placed at 4,000 pounds. The vines procured by Mr. Baker and planted, were chiefly the Catawbias and the Isabellas.

The requisites of the vine, as well as the mode of culture, are given as follows:—

The vine requires for its growth a warm exposure, though not too hot, and a moderate degree of moisture. This condition is found to exist in a high degree upon the slope of the hills adjacent to the Pleasant Valley and to the west shore of the Crooked lake. The banks of the lake shore and of the various gulleys through which the water passes down to the valley and the lake are especially favorable to the grape. These gulleys, made by the torrents of the waters gushing from the plateaus, afford complete protection to the vine; and the formation of the soil is such as to require but little culture beyond the initial preparation of the soil for the reception of the roots.

Most of the vineyards of which we have made mention have been set with cuttings, which being put into the earth, (which has been made rich, and deeply tilled,) from three to four inches apart, and being mulched when the weather is too dry, they strike roots, and are fit the next spring to set in the vineyards.

Some few have propagated the vine by layers: the shoots near the ground are fastened down below the surface of the

ground, and the eyes will strike roots, and being cut asunder, form distinct vines, ready to set the next year in the vineyard.

Where extremely scarce varieties are desired, they are obtained by single buds, or eyes. These are caused to grow in a warm apartment, under glass, where the temperature is warm and uniform. The most sure process to start the eyes is by a *bottom heat* of sand, where the eyes are placed and forced to strike roots.

The soil selected for the vineyard, if a side hill, has been generally terraced into distinct plateaus, but some, where the slope would allow, set their vines without this preparation, and by various means have rid the surface of water, and their vineyards grow finely.

Some have planted their vines in rows, not more than six feet apart, while others have made the space ten feet. This latter is deemed much the best for the Isabellas and Catawbas, as they are strong growing varieties, forming an abundance of wood.

The most common mode of training the vines have been on "*trellises*," and principally upon the "*low system*." The young vine is pruned back to two eyes, from which two shoots are obtained the following summer.

By cutting, the season following, the vertical shoot, the vine will form four shoots.

These, with proper management, are trained upon the trellis and made to produce fruit and to form wood, as the cultivator may desire. The usual course is to have fruit-bearing arms and wood-growing arms each year, in order to secure full crops from year to year successfully.

The trellis is formed by setting posts into the ground some ten or twelve feet apart, and passing three wires of suitable size (say No. 12) between them. This forms a reliable and substantial support to the vine. Some drive stakes into the ground and nail slats, one inch by three, upon them, which forms a temporary support, but they soon decay and have to be renewed.

Some of the most careful cultivators of the grape train their vines upon the *low trellis* in such a manner that the

bunches of grapes will be near the ground and receive the warmth radiated from the surface, which insures an early maturity and a rich flavor to the fruit. The grapes growing near the surface of the ground are generally found to ripen sooner, to ripen more thoroughly, and to exhibit more of "*the aroma*" which is produced at a *certain stage* of the maturity of the grape; which, if not arrived at, *no aroma* is discovered, or which, if interrupted at the precise stage, it is greater or less, as the case may be.

The perfect maturity of the grape is of more importance than many cultivators are willing to admit, and the difference in this respect is very discernible in the different vineyards of Pleasant Valley and the lake shore. Some are quite willing to risk the *quality* of their crop for the sake of the *quantity* produced, and allow their vines to grow too much to wood, to be trained too high; while a few discerning and careful cultivators rely more upon the *quality* and train their vines accordingly.

In an examination of the vineyards of Pleasant Valley, in the autumn of 1862, by request of the State Agricultural Society, and with a committee of its appointment, this *difference of training* was noticed particularly in the effect it had upon the *aroma* of the fruit. The vineyard of Charles D. Champlin was strictly trained *low*, and many of the bunches hung within a foot of the surface of the ground; these were noticed as being fully ripe and rich in *aroma*, while some, three feet higher, were still unripe and extremely acid. Other vineyards were noticed to present ripe, aromatic fruit, or be deficient therein as the training was low or high.

We present the above observation as of great importance to cultivators of the vine, as the quality of their grapes are valued for the table, as well as for wine, in proportion to the peculiar flavor they possess, derived from the *aroma* they contain.

Pruning has for its object the formation of the plant and the direction of the flow of the sap. As the vine bears best on branches which come from the wood of the previous year's growth, wood of a similar character must be produced for the next year's crop.

In the year 1860 an association known as the "Pleasant Valley Wine Company" was formed, with a capital of \$10,000, and the parties who were active in organizing it were Charles D. Champlin, William Baker, Aaron Y. Baker, T. M. Younglove, G. H. Brundage, Delos Rose, Grattan H. Wheeler, Clark Bell, J. W. Davis, D. McMaster and Dugald Cameron.

The company secured the services of John F. Weber as superintendent to manage the details of the wine and brandy manufacture, as also of the propagation of vines for sale and for future vineyards. Mr. Weber, being a German by birth and education, had acquired great experience in grape culture and in the manufacture of wines and brandies. Aside from this, he was a man of refinement and general intelligence, bringing with him all those qualifications calculated to ensure success in the department of business to which his services were called.

Under the supervision of Mr. Weber the company erected a spacious wine-vault—a press house. They procured a suitable distillery for the manufacture of brandy, also a wine-mill, of the Hickock patent, and erected a house for the propagation of vines. These were all kept in fine working condition by Mr. Weber, and the success of the company was so great as to induce them to double their capital in 1862.

In 1860, when the company was formed, Catawba grapes were sold for six cents per pound and Isabellas at four cents. The present year, 1864, the former brought nine cents and the latter six cents. Fine Catawbas are now worth thirty cents in New York.

The first vintage of the company, in 1860, was made from 35,990 pounds of grapes; the second from 38,988 pounds; the third from 271,825 pounds; that of 1863 from 192,467 pounds; and the fifth vintage, 1864, of about 500,000 pounds. In 1862 the company manufactured 10,967 gallons of wine and 3,403 gallons of brandy; in 1863 9,844 gallons of wine and 1,418 gallons of brandy; in 1864 about 30,000 gallons of wine and brandy in the same proportion of excess of previous years. In making the wine and brandy the company have used up about *one-third* of the entire crop grown in the valley; the balance has been marketed for table use.

They have made wines of the Still, Catawba, Isabella and Claret. They have also commenced the manufacture of champagne from the Catawba grape. In connection with the manufacture of wine, they have manufactured brandies—white brandy (medicinal), Otard brandy, and Cognac brandy, all of the purest and best grades.

Their wines and brandies are obtaining a wide reputation for purity and flavor. All the wines made in 1860, 1861 and 1862 are sold, and most of the 1863 vintage. Their brandies have been sold about as fast as manufactured, and they find it difficult to fill the accumulating orders.

Aside from the grapes sold to the company, large quantities of the very choicest are put into boxes and sold in the city and village markets for table use. These bring an advanced price, fifteen to thirty cents per pound, according to quality. The vine cultivators feel that they have really found an "Eldorado" in all the good times and circumstances by which they are surrounded.

Mr. Denniston next speaks of the important business of gathering the grapes, as follows:—

An important branch of the vineyard attendance is the gathering of the fruit *at the proper time*. When the fruit is ripe and its juice has attained its peculiar "*vinous taste*," and the bunches are surcharged with a rich "*aroma*," in this state the grapes are in a good condition to be gathered. This should be done quickly and in dry weather. The usual vessels used in the gathering of the grapes is a wooden pail and a tub of a size easily carried when filled, and larger tubs in which to transport the grapes to the wine cellar. The choice bunches, intended for marketing for table use, are put into boxes of from eight to twelve pounds capacity and nailed tight.

When the grapes are taken to the wine-cellar and weighed, each man receiving credit for all he brings, they are then run through the grape mill into a large vat beneath, called the "*fermenting vat*." By drawing off the juice directly from the vat and putting it into casks to ferment, the product is

white wine, which is far more pure and agreeable than that obtained from the husks. That which is left in the vat is "*watered*" and allowed to ferment, is distilled into brandy, or, being watered with sugar dissolved therein, by means of which the husks are thoroughly soaked, these being pressed, produces *red wine*—the color being contained in the skin. The wine is put into large casks, of about fifteen hundred gallons capacity, made of sound white oak staves in the most substantial manner. These casks are thoroughly purified before the wine is put in, and, when emptied, is washed clean, then "well sulphured and bunged up."

On the subject of manures the writer thus speaks:—

Although the vine is a "*gross feeder*," and will grow vigorously in rich soil, taking up its aliment in huge proportions, yet where the soil is in proper condition when "*set to grapes*," it will produce several crops without much restoration by manure. A due caution is to be observed in this respect; by overcharging the soil with fertilizers, a profuse growth of vine is induced, with small inferior crops, but the soil requires renovation from time to time to prevent exhaustion, and experienced cultivators have found *marl* and *wood ashes* a good application after the fruit is gathered in autumn, and cattle manure mixed with litter, barley and oat straw. Straw of beans may be applied to advantage, as they all contain a considerable amount of *alkali*.

The vine is principally composed of lime, magnesia, alkali and phosphoric acid, and any ingredient containing lime and alkali furnishes proper manure. Bone black is a powerful manure for the vine as it is largely composed of phosphorus.

To loosen the soil straw ploughed under, weeds and grass, especially clover, produces a fine tilth, and a free, open and loose soil.

Experience has demonstrated that compost, if not mixed with substances obnoxious to the vine, is the most suitable fertilizer, because it is deprived, by fermentation, of all *volatile ammoniacal* substances injurious to the vine. And all the other substances being dissolved are easily taken up and absorbed by the vine.

In order to make the compost, a pit, in some shady place, ought to be prepared, in which to put the fertilizing substances, such as animal and vegetable offal, ashes, straw, turf, sods, &c., &c., and the whole covered with earth; at times the whole should be turned, and sprinkled with water to produce a proper fermentation, and a solution of all the parts to perfect the mass for the application to the soil of the vineyard.

Too much care cannot be taken in the application of manure to the vine. Though gross in its appetite to take in food, yet it is extremely sensitive in the effects produced thereby. If ingredients enter therein obnoxious to the vine, it will readily develop the effects in its growth and production. Nitrogen in none of its conditions enters into the composition of the vine; not even its leaves and shoots contain it, and manure containing nitrogen is injurious.

Upon the subject of manures for vineyards this general fact stands prominent—when the soil has become exhausted, the vines and the fruit become meagre, and the wine made therefrom thin and meagre, wanting body, and the peculiar flavor termed “*bouquet*.” Over-manured vineyards will make a great show of wood, tendrils and leaves, but the fruit will be *gumous*, and the wine made will become too *fat* and *smeary*. In this department of grape growing a discerning mind will discover the *medium* in which there is both safety and profit.

Mr. Denniston closes his Essay with an account of the grape lands and vineyards of Pleasant Valley, and a brief notice of the different grapes that have been cultivated. Among them are the Israella, the best *very early* grape, large bunches, hardy and productive, the best early table grape—equal, in all respects, to the Delaware.

In a note upon the Concord we find the following remarks in reference to the temperature necessary to fully mature several of our popular sorts. As we have not seen this view of the subject before, we commend it to the attention of grape growers:—

By a series of observations made for a number of years at Waterloo, N. Y., it has been seen that those varieties of

grapes which had a mean temperature of 69° during the month following the *stoning process* were of a superior quality. Those that had 67° were inferior, and those which stoned so late as to have only 65° did not ripen. Of the first class were the Delaware, Clinton, Diana, Isabella and Rebecca. Of the second class were the Hartford Prolific, Union Village, Concord, Catawba and the To Kalon, and of the class that did not ripen were the Anna, Y. Madeira, and Crevelling. From these observations the following deductions are made: That the Delaware and Clinton vines require a summer temperature of $66^{\circ} 5'$, a hot month of 70° , and a September of 60° , or a mean for their growing season of 65° . The Concord, Hartford Prolific and Diana require a mean of 67° , or a summer heat of 70° , a month of 72° , and a September at 63° . The Isabella requires a mean of 72° , summer, 72° , one month, 73° , and a September, 65° . And the Catawba to ripen fully requires a mean during the growing season of 72° , or a summer mean of 73° , a hot month of 75° , and a September of 65° . The European grapes require a summer mean of 74° , a hot month of 75° , and a September not lower than 75° , to ripen fully. A writer states: "The exceptions to the above are found at places *influenced by water*, whose high or moderate September mean may extend into October without intervening frosts."

POMOLOGICAL GOSSIP.

THE NYCE FRUIT HOUSE.—We have, from time to time, called the attention of our pomologists to the subject of preserving fruit, and the process brought to a high state of perfection by Professor Nyce of Cleveland, Ohio. It is some eight or ten years since the first house was erected by him; but there are now some eight or ten in the large cities of the West, all in successful operation, and supplying the people with fruit almost as fresh as in its season, for many months after gathering, or, in fact, until the return of the fruit season. The first experiments were necessarily a little

imperfect, but subsequent improvements have been made until it is believed they are as near perfect as possible.

At the late meeting of the Western Fruit Growers' Society of Western New York, Professor Nyce read an interesting paper on the preservation of fruit, and alluded to the houses which had been erected devoted solely to this object, stating that the profit of one season's fruit paid the entire expense of the buildings. Many plans have been projected for the preservation of fruit, and the Massachusetts Horticultural Society, a few years ago, authorized a Committee to examine them and report. This they did, but the mode was expensive, and the plan was on so small a scale that no reliable facts could be obtained in reference to its general adaptation.

Professor Nyce has, we understand, interested several cultivators in Boston in his process, and a company is about to be organized to erect a building and try the experiment. If it succeeds, of which there can be no doubt, from its success everywhere, it will be of immense public benefit, not only in supplying our market with fruit the year through, but in enabling our amateurs and gentlemen who are lovers of fine pears, to have the luxury of eating Bartletts and Sheldons in January, and grapes in April and May, as fresh as when gathered from the trees. Those who are interested in the subject should examine and look into the merits of Professor Nyce's invention.

THE PERSIMMON.—Through the kindness of Dr. Kirtland of Ohio we have received seeds of the persimmon, saved from seedlings of his own, which are much in advance of the wild sort. The persimmon makes a beautiful tree, and, as an ornament to the lawn, it is an acquisition, the foliage, as Dr. Kirtland says, contrasting with that of other trees, especially evergreen. We shall plant our seeds, and hope to succeed in raising enough to ornament our own grounds. Dr. Kirtland thinks that after a few generations of cultivation, on the principle of Van Mons, we may, perhaps, obtain a valuable fruit, akin in its qualities to the date.

THE NEW BLACKBERRIES.—We have been rather surprised to learn that the new blackberries are held at a price which would be considered enough for a new pear. We never find

fault with a high price for a good thing, but, on the contrary, most cheerfully pay it, when there are but few to be had, and the demand is equal to or greater than the supply. In such a case those only who are willing to pay liberally can or ought to possess it. But when the supply is far beyond exhaustion, when, in fact, a fruit is cultivated by the acre for the market, there is no reason why the price of the plant should not be in proportion to the supply, and the labor and skill in their propagation. There is no need of the latter with the blackberry.

GROS COLMAN GRAPE.—This is the name of a new grape exhibited by J. E. Mitchell, Esq., at the Annual Show of the Pennsylvania Horticultural Society in September last. The bunches are large, berries very large and round, and of a black color, with a fine bloom. It appears to be a fine addition to our foreign grapes. It obtained the first premium as a new variety.

LANSINGBURG APPLE.—Recently shown at the Meeting of the Ohio Pomological Society. Dr. Warder describes it in the Ohio Farmer as a fruit of medium size, globular, conical, with a yellow skin, assuming a brilliant carmine on the sunny side. Flesh yellow, breaking, firm, not very juicy, subacid and rich. Ripe from March to June. Valuable for its fine keeping qualities and beautiful appearance. It keeps well, as it neither shrinks nor decays.

FOOTE'S EARLY ORLEANS PLUM.—Mr. C. Downing describes this new plum in the Horticulturist. It was raised from seed by the Hon. Asahel Foote of Williamstown, Mass., raised by him from seed of Wilmot's Early Orleans, and although not so rich and luscious as some of the varieties it is of good quality, earliness, hardiness, productiveness, and freedom from rot. Size medium, roundish, inclining to oval. Skin very black, with blue bloom. Tree hardy, vigorous and productive.

POMOLOGICAL PROGRESS.—Some correspondent inquires of one of our cotemporaries "What is the average life term of the dwarf pear?" To which he answers that the average is ten years, but if a tree have the care and attention it requires, he believes that it will live at least two-thirds as long as a

standard, say 25 or 30 years. As many of our own dwarf trees are 25 years old, and those of Col. Wilder 30, and yet in full vigor, we think the average is a little more than 10 years. Many of our standards, 30 years old, have but just begun to bear. It does seem as if it was about time to have a better knowledge of dwarf trees.

THE ROYAL HORTICULTURAL SOCIETY.

BY H. W. S.

THE first Spring Exhibition of this Society took place yesterday in the corridors attached to the great Palm house at Kensington. There was, as usual, a very great crowd and a very interesting display of flowers. Among them the most attractive were a collection of roses and spring bulbs from Mr. William Paul of Waltham Cross; Primulas, from Mr. Toombs, gardener to W. S. Roals, Esq.; a fine specimen of *Dendrobium speciosum*, from Mr. Buller; a collection of grapes, in a wonderful state of preservation, from J. Kelp, Esq., M. P. Mr. Bateman delivered an interesting address on the *Amherstea nobilis*, so rarely flowered in England, the magnificent blossoms of which were exhibited at the meeting. In the great Palm house were two grand rhododendrons, (var. *Smithii*) at least eighteen feet high, in superb bloom. But by far the most interesting feature was Mr. Paul's exhibition of roses and hyacinths, each wonderful in its way, obtaining first prizes, and completely distancing all competitors. Among the finest of the hyacinths were,

Garibaldi. Dark reddish crimson.

Lord Wellington. Pale rose, with carmine stripes.

Macaulay. Pale, with dark red stripes.

Solfaterre. Fine orange red, light centre, changing to deep red, very distinct.

Von Schiller. Salmon pink, crimson stripes.

Alba Maxima. Pure white, splendid bells.

Mont Blanc. Pure white, fine bells and large spike.

Vaux Baak. Crimson, (took 1st prize.)

- Couronne de Belle. Beautiful azure blue.
 King of Blues. Rich dark blue, very fine.
 Lord Palmerston. Clear grayish blue, white eye, splendid bells.
 General Havelock. Blackish purple.
 Prince Albert. Shining black.
 Sir Henry Havelock. Plum, very distinct.
 Adeline Patti. Mauve.
 Duc de Malakoff. Fawn, striped with red.
 Ida. Beautiful, clear primrose.
 Koh-i-noor. Pale, salmon red.
 Laureus Koster. Dark blue, close spike.
 Bird of Paradise. Light straw.
 Van Speke. Light blue.

These average in price from three to twelve shillings sterling each.

The gem of the Exhibition, however, was the Rose Show. Of these the glory was the Black Prince, which really had the appearance of being made out of black velvet. The petal had more the consistency and feel of velvet than any rose I ever saw, while the color was the darkest crimson. Mr. Paul thinks it resembles a very dark Gloire de Sautenay, though I think it infinitely finer.

Dr. Lindlay is another superb rose flower, crimson, with black centre; color very intense and fine foliage. Esteemed the finest English rose yet raised.

Elizabeth Vigneron. Rosy pink; flowers very large and full; cupped in the style of Lælia, but finer; great bloomer; one of the best of this year's novelties.

Glory of Waltham. Flower crimson, like Red Rover; extraordinary vigor; fine yellow rose. Grows 6 to 10 feet in a season.

Charles Le Fair. Dark deep crimson, fine.

Parmentier. Small, but very double.

Madame de St. Joseph, (Tea.) Beautiful salmon.

Madame Damaizin. Superb, delicate salmon.

President, (Tea.) Rosy salmon.

Among the miscellaneous plants there were some beautiful double flowering peaches. The *Dianthiflora* and *Purpurea*,

as well as some new Azalias and A. Juliana, deep melon, very distinctive. The Rhododendron Illuminator (fine rose) and Schiller, (a very distinct purple,) were very handsome. Mr. Paul's Exhibition of Tulips was also very fine, but as they were only numbered I was unable to obtain their names.

Above we present our readers with a highly interesting account of the late Exhibition of the Royal Horticultural Society of London, held on the 16th of March, kindly sent us by H. W. Sargent, Esq., whose description of the magnificent hyacinths and roses—which formed the principal feature—will be read with delight by all who appreciate the elegant hyacinth, too long neglected as an early spring flowering bulb, for the decoration of the greenhouse and the conservatory. The roses too, were Mr. Paul's best, and in saying this we express all that can be said of fine bushes, and the rarest varieties, for Mr. Paul stands prominent among rose growers. We trust that our own cultivators will be incited to fresh exertions in the culture of both the hyacinth and rose.—ED.

THE RANUNCULUS.

BY SEE.

I AM glad to see that the introduction of the Asiatic ranunculus will probably be initiated among us, through the sowing of the seeds offered to the floral public in your list of novelties for 1866.

I well remember, more than thirty years ago, a few choice beds of this lovely flower, and the charm these gems of floriculture afforded. Nor have I scarcely seen any since, a starved specimen or two at most, none so rich, so varied, so duplex and even full to the very centre, such colors, tints and varieties, in every *strain*, to use a new coined and popular word, and of a diversity of altitude of flower stem, or richness and abundance of foliage.

Nobody will ever tire of the garden tulip, let it be never so common or homely, provided it be a tulip, and the statelier

and more imposing its contour, the more desirable it is in the flower border, let the garden be ever so small and limited. Some ancient roots still lingering in old and familiar places, rejoice me every successive May with their showy petals, dingy colors of orange and reddish, or delight my eyes with their rich crimson cups on strong lofty stalks. Once I saw a gorgeous sight of nearly a thousand flowers of this last mentioned variety and the bright yellow, mingled together on either side of a long central wall of a garden, devoted in other respects mostly to culinary plants. So much for the tulip of old 'lection week; but could we make the old Asiatic ranunculus equally familiar, how would our spring gardens glow with these floral rubies and amethysts of the East!

A voluminous writer on the ranunculus among other flowers, towards the end of the last century, was MADDOCK, who enumerates eight hundred varieties, all specifically named, and artistically arranged according to their colors, from the dull coffee or olive colored upward to the yellow, orange, crimson, red, rosy, purple, gray and white; also with spotted and even striped blossoms! What an exhibition a bed of these beauties would afford! If, as is promised in the advertising list, the seed offered the public is of a "new strain" in this department of floriculture, and the roots with ordinary care will give a large proportion of good double flowers on the second year, may we not anticipate quite a new era, twelve months hence? Success then to the *RANUNCULUS ASIATICUS SUPERBISSIMUS*, a novelty at once splendid and most superb. Why should not a premium or prize be proffered from the Massachusetts Horticultural Society, on the best seedling collection of May, 1867? When on exhibition, if not a member of the flower committee, may I, at least, "be there to SEE."

SALVIA SPLENDENS COMPACTA.

BY THE EDITOR.

ALL the *Salvias* are more or less showy and desirable plants, some of them hardy, but the most brilliant are tender,

and require the shelter of the greenhouse in winter. The latter, however, are among the most ornamental summer blooming or bedding plants, displaying their flowers from July to October.

The well known *S. splendens* has long been a favorite in our gardens, but the dwarfer variety, *S. splendens Gordoni*, is yet very little cultivated; it deserves, however, a prominent position in the garden, being dwarfer, more compact in habit, and with the same brilliant flowers, but it is not so free and rapid a grower, and scarcely so imposing in aspect.



8. SALVIA SPLENDENS COMPACTA.

S. fulgens, velvety scarlet; *S. calcalæfolia*, blue; and *S. patens*, blue, are each very fine plants, the *S. calcalæfolia* being of much freer growth than *S. patens*, and of an equally intense blue color, though not quite so large flowered; it, however, forms a rich contrast with the scarlet, which, with its fine blooming qualities, renders it a great favorite.

S. splendens compacta (FIG. 8) is a new French variety, which, from the description, appears to possess many superior qualities. It is distinguished from the *splendens* by its more

tufted habit, its dwarfer growth, and by the spikes of flowers, which are more numerous, bloom earlier, and more dense upon the stems. Recently introduced, it is much to be preferred to the old *S. splendens*. Its numerous flower spikes, much neater in habit, as well as its brilliant color, form one of the most attractive ornaments of the summer garden, producing a superb effect.

All the tender salvias are easily cultivated from cuttings, taken from plants wintered in the greenhouse. When grown in a warmer temperature, the fresh young shoots taken off three or four inches long, and inserted in pots, in light soil, soon strike root, and when started they should be potted off into small pots, and encouraged to grow by placing them in a hot-bed, or on a warm shelf. In April these young plants should be hardened off by removal to a cooler house or frame, and in May planted out in the open ground, in a good light rich soil, where they grow rapidly and bloom abundantly until frost.

General Notices.

CULTURE OF BULBOUS ROOTED PLANTS.—To many persons, no doubt, a bulb would appear to be a bulb, and nothing more, and such a distinction would not be suspected. If indeed the cultivator had advanced so far in the principles of plant-growing as to know, and acted on the knowledge, that the success of bulb-growing in great measure depends on the thorough development and maturation of the leaves, and if beyond this he had varied the temperature according to the wants, real or supposed, of the species under treatment, the chances are that this would be regarded by such an one, and probably even by a still more numerous class, as the most perfect treatment that could be adopted, especially if, in addition, the bulbs were thoroughly dried during the resting period. The remark to which we have alluded points, however, to something more, and which is so important in many cases, that we desire to direct towards it especial attention, the more so as it has received very little attention in books.

“The whole art of cultivating bulbs well,” observes a trustworthy author (McIntosh), “depends on the attention paid to two particular points, viz., the season when they are put into, and the length of time that they remain in a state of rest, and the perfection to which their foliage is brought during the season of growth.” Capital advice this, as far as it goes, and it goes far enough in the case of many common bulbs; but it is advice which needs to be supplemented in the case of those bulbs which

possess persistent roots, and it is just this supplemental information, to which Mr. Saunders' well-timed hint directs our attention.

For cultural purposes, then, and especially as regards the nature of the rest which it is important to secure in almost every case, all true bulbous plants may be divided into two classes--those in which the bulb produces only thin fibrous roots, which perish entirely, and are renewed annually, and those which are provided with roots of a more succulent and durable nature. The first group is well represented by the familiar hyacinth and tulip; while, as an illustration of the second, the plant which drew forth the remark we have quoted, and others of the same family, may be cited.

So far as regards the treatment of the deciduous-rooted section of bulbs, there is no doubt that the leading features of their treatment should be such as to secure the following results:—Full leaf development, perfect and natural leaf maturation, a gradual but thorough ripening off, and just that amount of desiccation which will prevent decay, and at the same time keep the bulbs, whether of imbricated or tunicated structure, from losing their plumpness—the degree of desiccation that can be endured, being it is to be observed, very different in the two classes of bulbs.

In the case of the persistent-rooted section of bulbs, that is to say, those which are provided with fleshy or succulent roots, a greater or smaller number of which endure, if they are not destroyed by adverse conditions, the treatment must be different. The presence of these perennial roots indicates that the bulbs which produce them require a more continuous course of feeding, and less of that absolute rest which is advantageous in the other case. The functions of these roots is perhaps to continue to supply the bulbs with aliment for a longer period than is found necessary for the deciduous-rooted series; perhaps also, if indeed the action is not nearly or quite continuous, to renew the supply more speedily than in the other case; but probably to serve as supplementary reservoirs of food provided during the time of active growth. Whichever of these may be the most exact inference as to their action, the necessity for their preservation is obvious, for if they are lost or destroyed, the bulb is put to the necessity of exhausting itself to a greater or less degree to replace them. Their preservation does not offer any obstacle to the providing of a due period of rest with its necessary desiccation, but the degree of dryness induced must be moderated with judgment, and never carried so far as to dry up these reservoirs of nutrition.

These considerations lead inevitably to the conclusion that in the case of persistent-rooted bulbs the soil should not be reduced, at least for anything beyond a very short period, to that condition which in gardening language would be described as perfectly dry, but should be kept in that dryish but intermediate condition, which while it secured to the bulb-coats the firmness indicative of a complete and thorough ripening, would retain the succulency and merely suspend the action of these enduring roots. It may further be concluded with equal certainty that the less such bulbs are exposed by removing them permanently from the soil, the better for their future well-being. In all other respects, especially in that securing perfect leaf-development, they would come under the general *régime*.

There are, we think, to be detected, signs that bulbous plants are coming again into popular favor. They certainly comprise some of the most gorgeous of flowering plants, and deserve more public favor, than of late years they have received; and we trust that some at least of those who may be induced to turn their attention to their cultivation, may profit by the hint Mr. Saunders has so judiciously thrown out, and which we have taken as our text on the present occasion.—(*Gard. Chron.*)

POINSETTEA PULCHERRIMA.—After the plants have had six weeks or two months' rest, by withholding moisture, I cut them back to within half an inch of the old wood, keeping them in the stove until they have started into growth. About the beginning of May they are shaken out, potted into smaller pots, and placed in a cold frame, as near the glass as possible, keeping them close for a few days, when air is gradually and cautiously admitted. After they have filled the pot with roots, they are repotted into their flowering pots, which are from six to eight inches in diameter, and as the warm days advance the frame is slightly raised by a brick under each corner, keeping the lights off excepting when the sun is very hot, and syringing overhead in the evening of hot days, but avoiding saturating the ball, as they are impatient of too much wet, at the same time they should not be allowed to flag. In July they are stopped, and they are continued in the cold frame till October, when they are removed into the stove with a temperature from 65° to 70°. About the middle of November they show flowers, and if duly attended to, they will continue to bloom in perfection until the middle of February. By the mode of treatment just described I have at the present time, January 24th, plants ranging from 6 to 20 inches in height, with flower heads measuring from 12 to 14 inches across.—(*Cottage Gardener.*)

TACSONIA VON VOLXEMII.—In 1864 I purchased a fine healthy plant of it, and planted it in what I considered to be a good situation, against the back wall of a greenhouse, in well prepared compost. The plant failed to make much progress, and continued, as the season advanced, to look more and more out of its proper element. I had great fears of losing it. It was allowed to remain where it was planted during the winter season, without receiving any moisture. In April, 1865, I took another step with it, which has proved to be in the right direction. I had a large slate box placed in a glass covered vestibule to receive a young plant of citron, intending that it should cover a portion of the back wall on trellis work. It struck me that if I was to have the box divided by a slate partition, and prepare compost suitable for this Tacsonia, it might succeed, and overcome my previous disappointment; accordingly I carried out my intentions, and in the course of eleven months the plants covered a space against the south wall 12 by 12 feet, making at the same time considerable progress along the wires under the roof—carrying fine healthy foliage. Its beautiful flowers are now the admiration of everyone, and it promises to supply us with a good succession of them through the coming season. The temper-

ature in which it has flourished so well with us during the past winter has ranged from 50° to 55° at night, and on sunny days 10° higher. It enjoys a liberal supply of water.—(*Gard. Chron.*)

THE BEST SEASON FOR PLANTING CONIFEROUS TREES.—The best season for transplanting all evergreens, and especially conifers, is the months of August and September. The place in which they are to grow, if they are intended to form single specimens, should be thoroughly prepared by trenching and digging to the full depth of the natural soil, and in extent at least from 14 to 15 feet in diameter, keeping the surface soil on the top, but also well breaking up the subsoil to the depth of from 18 inches to 2 feet. Moreover, if the situation is at all damp, and the soil retentive, it must be thoroughly drained. I am not an advocate for adding fresh soil, except in cases where the natural soil is exceptionally poor; then of course a few cartloads of good sound loam, and the same quantity of charred vegetable refuse may with advantage be incorporated with the natural soil of the place, and the tree carefully planted in the middle, staked, well watered, shaded from the sun and syringed overhead, once or twice a day for two months, or until there is fear of frost. Of course the syringing may be omitted on days when it rains. And in addition, I would, if practicable, shelter the plant the first winter; and I can think of nothing better for this purpose than what are called in this neighborhood wreath hurdles, or in some parts of the country wattle hurdles. These being set on end, and fastened to stakes will effectually shelter any plant, up to say five feet high, and may be removed in spring as soon as the growing season has set in, when, if the weather is dry, or rather unless it is very wet, the plant should have two or three good soakings of water. A plant right at the roots, and so treated, will amply repay in a few years the little extra trouble which may have been expended upon it.

In conclusion, let me recapitulate that a pot bound condition is the worst in which a plant can be; that because a tree is seen growing in the open ground, it by no means follows that the evil does not exist, and that when a healthy plant, right at the roots, is obtained, it must be carefully and properly planted and tended.—(*Gard. Chron.*)

Societies.

CINCINNATI HORTICULTURAL.

At the meeting of this Society, Saturday, March 3, a report was made by Mr. Heaver, upon the currant, which he characterized as a valuable fruit. After alluding to the introduction of new varieties, the various uses of the fruit, and some of the reasons why it has not received more attention, he gives the following information upon the modes of propagation, pruning, planting, and a list of the leading sorts:—

MODES OF PROPAGATION.—Cuttings of the previous year's growth may be taken off early in the spring, some ten or twelve inches long; the terminal shoot should be cut back to a strong, prominent bud; these cuttings planted in mellow ground, well prepared, will readily take root and grow, and the next fall or spring may be planted where they are permanently to remain.

Many writers—practical men, too—Downing among others, recommend disbudding of the cutting previous to planting; in other words, to cut out all the eyes or buds, which would be below the surface of the ground. This is the common practice with English, and I believe many Eastern gardeners, but a somewhat lengthy experience in this locality satisfies me the practice should not be followed here. I have with one exception lost all my imported standard stock-plants from the attacks of the borer, which perforates the stem and completely eats out the entire centre, or pith, and thus destroys the plant. When the cutting is allowed to retain its lower buds, should one column be destroyed, the plant will throw up strong shoots below the parts injured, which extends generally near the surface of the ground. I suppose from the general adoption of the mode first described, our Eastern and European authorities are unacquainted with the enemy to the currant that we have here.

PLANTING.—Various distances are recommended. I think the best is five by five. This will allow ample room for working and picking. Cultivating may be done by the plough for the first two or three years, after which time the roots near the surface would be liable to injury by that instrument; shallow, surface working should then be adopted, and the plants sustained, and the weeds kept down in early summer by mulching. The currant makes one continued growth in spring and into the summer, but when it once stops, does not break out into a second growth, through the summer, hence the importance of stimulating and encouraging a strong and early growth.

PRUNING.—In the early life of the plant the object should be to get a strong, vigorous shoot upon the root. This can be best attained by cutting out all inferior and twiggy wood each spring, close to the ground, reserving the strongest for fruiting next and succeeding years.

The shoot or shoots left for after-fruiting should be shortened from one to three inches according to its strength, and this will induce it to throw out lateral branches the following season, which should be cut back the next spring to spurs from two to four inches in length; and this treatment should be repeated each successive season until the fruiting stock shows signs of weakness by the production of small and inferior fruit, when, having provided previously a succession stock, the old bearing stem should be cut away near the root.

RED VARIETIES.—Red Dutch: good and productive.

Cherry Currant: very large and productive; needs rich cultivation. Cerise de Tours: resembles the foregoing. La Versaillaise: said to be one of the best. Red Gondoin: fine, late variety. Fertile de Pallnau: very productive. Victoria: I have not found come up to its English

reputation. Berton's Seedling, La Hative, Fertile d'Angers, and some others, are new varieties I have not sufficiently tested to venture an opinion on their merits.

WHITE VARIETIES.—White Grape, the best white table, being less acid than others.

White Dutch, good and productive. White Gondoin, good. White Transparent, White Imperial, Dana's White, are all comparatively little known with us.

Black Currants.—This, as a class, is not appreciated in this country as it is in England; Black Naples, Black Bang-Up, and Ogden's Black are the best I have tested.

Gloire de Sablons is the latest novelty in currants furnished us by our French friends. It is of an amber ground color, prettily striped with red, presenting, according to the picture description, a very unique appearance. Of its table qualities I have no personal knowledge; it has been, however, highly commended.

FRUIT GROWERS' OF WESTERN NEW YORK.

In our last number we gave an extract from the discussion on the pear, at the meeting of this Society. We now add some account of the second day's proceeding, in reference to grafting the grape:

The eighth question was then taken up—"Can healthy and thrifty old grape vines, well established in good soil, be grafted successfully and profitably, or should new vines be planted?"

Mr. Hazelton narrated the experience of Mr. Isaiah Warren of York, Livingston county. He had grafted a large vineyard of Catawba at the surface of the ground, the same as an apple tree. They were grafted in March, as the sap began to start, and the wounds covered with wax the same as apple trees. He had been uniformly successful.

A gentleman from Pennsylvania said that there was no difficulty in grafting grape vines. The great secret was in grafting very early. It made no difference whether the bark of the graft and the old stock met. It would grow equally well if it did not.

Mr. Crane, of Niagara county, said he had uniformly failed in grafting grapes. He thought it was cheaper and better to root up the old vines and plant new ones.

The President said new vines would not grow well on the land lately occupied by old vines.

Mr. Wilder asked whether fall grafting had been tried.

Mr. Crane said he had failed equally by this plan with the others.

Mr. Charles Downing had grafted in the fall, below the surface of the ground, in November, covering with a flower-pot to keep the earth from falling on the graft.

Mr. ———, from New Jersey, had grafted in the fall Delaware and Aaron's Hybrid; of the latter one-eighth failed, and of the Delawares seven-eighths failed.

Mr. Thomas, of Saratoga, had good success in grafting in the fall. In one case the graft made a growth of fourteen feet the first year.

Mr. Barry said he had grafted a little every year; but had met with very indifferent success—nothing to boast of.

Mr. Wilder said that grafting grapes was a very difficult operation. Some failed with the best of care, while others succeeded without any trouble. He would rather agree to make nine hundred and ninety-nine poor grafts out of a thousand, than to make one good graft out of ten.

Mr. Downing said he cut off a grape vine two inches in thickness, and inserted a graft in the centre. It grew twenty feet the first year. (Applause.) Some years, however, he had no success in grafting, while in others scarcely any would succeed.

Mr. Moody said that new vineyards would succeed if planted on the same ground occupied by grape vines. He thought it was far cheaper to pull up the old vines and plant new ones.

Mr. La Rue, of Hammondsport, confirmed this opinion. He thought planters ought to wait a year for the old roots to die out before planting new ones.

The President read a communication from the Fruit Growers' Association of Upper Canada, announcing as delegates from Canada, Messrs. W. F. Clarke, Charles Arnold, William T. Goldsmith and D. W. Beadle.

Mr. Dewey, from committee on the death of Joseph Frost, presented a statement of the facts relating to his death, with appropriate resolutions.

The report was adopted, and ordered entered in the records of the Association, and a copy sent to the family of the deceased.

The ninth and tenth questions were taken up, and a lengthy discussion ensued on grape culture. Previous to adjournment a vote was taken to select the best six varieties of grapes for cultivation in Western New York.

Massachusetts Horticultural Society.

Saturday, March 3, 1866.—The adjourned meeting of the Society was held to-day,—the President in the chair.

On motion of C. O. Whitmore, Esq., it was voted that the Finance Committee have authority to issue notes to the amount of \$10,000, to take up the outstanding notes of the Society, now coming due.

On motion of C. O. Whitmore, it was unanimously voted that the vote passed at the last meeting, changing the day of exhibition from Saturday to Wednesday be reconsidered, and the whole subject referred to a Committee of four, of which the President shall be chairman, to report at the next meeting. The President nominated L. Wetherell, P. Barnes, E. W. Buswell, and Gen. Newhall, and they were chosen.

The following members were elected:—S. H. Allen, Framingham; A. R. Binney, Brookline; I. Gilbert, Elisha Tower, Roxbury; C. L. Blood, Boston; L. A. Tolman, A. McLaren, West Roxbury; J. R. Oldreive, J. E. Hodgkins, Chelsea; Moses C. Chapman, Milton; B. D. Locke, West Cambridge.

Obituary.

DEATH OF COL. ROBERT CARR.—Died in Philadelphia, March 16, Col. Robert Carr, at the age of 89 years.

At a meeting of the Pennsylvania Horticultural Society, March 20th, Mr. Meehan announced the death of Col. Carr, and made an appropriate address, from which we learn that he was born in the County of Down, in the North of Ireland. He came to this country with his father when eight years old, and settled in Philadelphia. He selected himself the trade of a printer, and worked in the office of Mr. Bache, the son-in-law of Benj. Franklin. Subsequently, at the breaking out of the war with England, he equipped a regiment at his own expense, and joined Gen. Scott in his lake operations, where he was wounded in the heel. After he returned from the war he married a daughter of Mr. Bartram, the well-known proprietor of the Bartram Gardens. It was from this period that Col. Carr was known as a horticulturist. Mr. Bartram died about this time, and Col. and Mrs. Carr carried on the business. In the formation of the Pennsylvania Horticultural Society he took a prominent part, was one of the Vice-Presidents, and was a constant exhibitor, especially in new things. Sixteen years ago the Bartram Gardens, through a series of misfortunes, passed into other hands, and Col. Carr has since retired from horticultural pursuits. He was distinguished for his probity and honor, and was highly respected by all who knew him. As one of the founders of the Pennsylvania Horticultural Society, and most active members, the Society as well as the country have sustained a great loss.

Horticultural Operations

FOR MAY.

FRUIT DEPARTMENT.

THE month of April has been generally very mild, and with two or three almost hot days, which have given a start to vegetation. The season now appears much earlier than was anticipated in the early part of the month.

GRAPE VINES will now be setting their fruit, and the house should be kept slightly warmer, and aired more carefully; avoid cold draughts, and do not leave the doors open. Top the laterals if they require it, and tie them in more firmly, if not already done. Damp down the house, morning, noon and night. Thinning may be commenced towards the last of the month. Vines in cold houses will now be coming into flower, and the temperature should be slightly increased. Discontinue damping the house

so often until the berries are well set. Tie in the laterals as they advance in growth. Vines in the open air should be tied up to the trellis, and superfluous wood pruned off; a little bleeding will do no harm. Manure the ground well.

ORCHARD-HOUSE TREES will now be in full flower, or have set their fruit, according to the earliness or lateness of starting the house. If in flower give an abundance of air, and discontinue all excess of moisture. After the fruit has set water rather more liberally. Continue to stop all the shoots on the upper part of the trees, as they extend in growth, but allow them on the lower part to grow freely; this will have the tendency to keep the trees bushy and compact. Allow plenty of room for each tree, and fumigate if the green fly is troublesome. Now is the time to put in a new stock in pots.

STRAWBERRY BEDS should have attention. Weed carefully, and if the plants are thrown out at all by the water top dress with good loam, mixed with old manure. Where the runners are too thick a portion of the smallest may be taken out with a good trowel. Do not dig between the rows. Cover the ground with clean straw in season to prevent the fruit being injured by heavy rains. New beds may be made now, as it is the best season.

FRUIT TREES may yet be pruned with perfect safety.

GRAFTING may be continued all the month.

INSECTS should be looked after, especially caterpillars and canker worms; the latter may all be destroyed by a thorough syringing with whale oil soap.

FLOWER DEPARTMENT.

Although this is the busy season, and work presses, yet many things ought to be attended to before it is too late. Winter flowering stock should not be forgotten while the summer garden is more immediately receiving attention. Prune and look after Azaleas and Heaths, and remove the latter to a cold frame, preparatory to planting out.

AZALEAS, done flowering, should be headed in, and such as are intended for specimens have a shift into larger pots. Young stock should also be encouraged by attention to stopping, &c. Plants, kept back and now coming into bloom, should be occasionally watered with weak liquid manure.

CAMELIAS will now be growing rapidly, and should be slightly shaded from the hot sun, and have liberal syringing every afternoon. Water more liberally at the root.

PELARGONIUMS will be coming into flower; keep the house cool, with an abundance of air at all times, both night and day. Turn the plants round often, and give plenty of room. Water occasionally with liquid manure. The object should be to get a good strong bloom. Repot, and encourage young stock.

ORCHIDS should be shaded from the hot sun in the middle of the day. Water more freely as the season advances.

BEDDING PLANTS. Continue to remove them to frames to be hardened off by free exposure to the air, preparatory to planting out. Put in more cuttings, if needed, and shade at once, never allowing the leaves to flag.

HEATHS AND EPACRIS should be planted out in good season, before hot weather.

CALADIUMS, growing freely, should be repotted.

TUBEROSES should be planted in pots, for a succession.

ACHIMENES should be potted off, using light leafy soil, loam and old manure.

CHRYSANTHEMUMS should be propagated from cuttings. Repot those already rooted.

FERNS should be shifted into larger pots.

GLOXINIAS should be repotted.

FUCHSIAS, intended for large specimens, should be shifted into larger pots, giving them good rich compost.

WINTER FLOWERING STOCK, of all kinds, should be repotted and have proper attention.

REMOVE all extra stock to frames, in order to give abundance of room to fine specimens requiring plenty of space.

AMARYLLIS should be repotted, and placed in a warm frame, or on a shelf, near the glass.

CACTUS should be more freely watered.

JAPAN LILIES should have their last shift into flowering pots.

FLOWER GARDEN AND SHRUBBERY.

The unusual fine weather has given a good verdure to the lawn, and in another week or more it will be ready for the first cutting. Roll often, soon after a rain, to obtain a smooth even surface. Rake, clean and roll the walks; and slightly dig or clean all ground among trees and shrubbery, removing all decayed leaves, to give a neat and tidy appearance.

JAPAN LILIES, and other bulbs, now appearing well above the soil, should have the surface stirred, and kept free of weeds.

HERBACEOUS PLANTS, of all kinds, may be removed with safety this month, except the very early sorts, already in bloom.

DAHLIAS may be planted the last of the month.

GLADIOLUS, and other spring bulbs, should be planted this month.

TRITOMAS, and other half-hardy plants, wintered in frames, should be planted out.

ANNUALS, of all kinds, raised in pots or frames, may be planted out after the middle of the month.

SEEDS, of hardy and half-hardy annuals, may yet be planted in the open ground, taking the precaution to make the earth light and fine.

CARNATIONS, wintered in frames, should be planted now in well prepared beds.

BEDDING PLANTS, of all kinds, may be turned into the ground in the first settled weather.

THE PENNSYLVANIA HORTICULTURAL SOCIETY.

A NEAT report of the Transactions of this flourishing Society, for 1865, lies before us, and we have been so much interested in reading the several essays which form the bulk of the Report, that we are induced to bring it more prominently before our readers—not that it contains anything particularly new—but because it records the doings of an Association, which has been one of the few which has been successful in its operations, accomplished a great deal of good, and eminently useful in diffusing a taste for horticulture in its immediate neighborhood, as well as throughout the state, and, we might add, the whole country. Contemporary with the Massachusetts Horticultural Society, organized a year or so before, but not incorporated until a year or two later, it has enlisted the interest of the numerous cultivators in and around Philadelphia, whose many and beautiful gardens, and particularly their elegant collections of plants, are noted throughout the country. No city can equal Philadelphia in such fine specimens of tropical vegetation—the palms, bananas, pandanus, tree ferns, &c., not one or two, here and there, but in such quantities as to render many of these collections sources of the deepest interest, and highest gratification to all lovers of rich vegetation.

Years ago, we chronicled the great attractions of the fine collection of the late J. B. Smith, and that of J. W. Dundas, the last of which was dispersed last year under the hammer, after the death of the owner. The collection too, of Dr. Rush, once so great, has, we regret, been scattered, many of the fine palms enriching the gardens of the wealthy plant lovers of Cleveland, O. Still there are many left, which show what real admirers our Philadelphia friends are of noble plants. The collections of the commercial dealers are also rich, and Messrs. Buist, Mackenzie, Richie, Dick and others, exhibit their interest in plant culture, and their enterprise by enriching them with all that is new and rare. The

dispersion of an old collection is but the signal for others to fill up the gap.

A city so rich in beautiful plants cannot or ought not fail to make a grand display at the exhibitions of the Society, and the brief account we gave in our last volume of the Annual Exhibition in September, shows that it was no failure, but a grand success. The report now before us gives all the details, of this, as well as all the monthly exhibitions of the Society during the year, with the names of the plants, fruits, &c., and the awards of the Committees, embracing much general information regarding the objects exhibited.

But that which gives more interest to this report is the publication of ten or twelve essays, on various horticultural subjects, read before the monthly meetings during the year 1865, and were gathered together for the instruction of the members, who may not have heard them, as well as for future reference for all.

It would not be in our power to much more than allude to these essays, which embrace the culture of plants and fruits, injurious insects, &c. From these essays, however, we make a few brief extracts, which cannot fail to interest both plant and fruit grower. The first is on the propagation of plants, by Mr. Henderson, the well-known cultivator of Jersey city:

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

Our favorite system of propagating is by using cuttings of the "young wood;" that is, young shoots that are formed by starting the plant in a greenhouse temperature, averaging from 40° to 60°. The proper condition of the cutting is easily determined by a little experience. In the case of roses, the best are "blind shoots;" that is, the short shoots that do not show flower-buds; and time when they are of the proper degree of hardness is determined by the flower-buds on the plant just beginning to develop. But with bedding-plants, generally, we never can get the cuttings too soft,

provided that they have not been grown in a high temperature, and without air. The tops of the young shoots are always best, although, if an elongated shoot is soft enough, it may be cut into sections of one or two inches in length.

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

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

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

Soft cuttings, or cuttings of the young wood, should have a *bottom-heat* of from 65° to 75° , and the *atmosphere* of the house should be always, when practicable, from 10° to 15° lower. If this is strictly adhered to, you are just as certain of a crop of healthy-rooted cuttings, in from ten to twenty days, as you would be of a braird of peas or radishes in May. But let once these conditions be deviated from for a single hour, by allowing a dash of sun to raise the temperature of the house or frame to 85° or 90° , then the soft unrooted slip will “wilt,” its juices being expended, the process of rooting is delayed, and, if the “wilt” has been severe enough, entirely defeated. The same caution is necessary in applying the “bottom-heat;” for, if fire is applied indiscriminately, without regard to the weather, it will be found that you will run the

temperature of the bench above the point of safety," (75°,) and, in proportion as this has been exceeded, so in proportion will be your want of success. It is true that some cuttings will stand a higher temperature than 75° bottom-heat, (grapevines, perhaps, 10° more,) but with plants in general, it will be better to let 75° be the maximum.

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

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

The second is by Mr. R. Cornelius, a well-known amateur of pears, and is upon "pear-culture," a subject which will interest all lovers of this fruit. His success has been marked, and his advice shows that he has understood the elements of success:—

Those persons who have chosen for themselves a home in the country, almost invariably look forward to the time when they will have an abundance of fruit, including the choicest variety of pears.

They have reason to expect this, as they have seen and tasted some of the best that are grown; and as the Pomological Society aids them in recommending certain kinds for cultivation in different localities, they are encouraged to make a beginning.

After reading the different standard works, and obtaining from friends the preliminary information, they purchase, as they suppose, a very choice selection of trees, which are planted after the most approved method, and success is confidently expected.

The result does not in all cases confirm the expectations, and as the trees do not grow as desired, they reason very naturally that the act of transplanting has retarded the growth of the first year.

The second year, however, having passed by, they are again disappointed, as trees have not flourished according to their reasonable expectations. They, therefore, come to the conclusion that the stock could not have been in a healthy condition when first received, or that the proper mode was not adopted in planting; or that the soil or situation was not of a kind suitable for their growth. Feeling a little discouraged, and not knowing exactly what to do, they observe that some trees have grown much better than others.

With a strong determination to overcome difficulties, they again carefully examine their orchard, and, without considering expense, give to each tree a new treatment, which they hope will cause it to flourish.

Having now done all that can be thought of, their expectations are great for the following year. The trees again put forth their leaves and branches in early spring, but are not much larger at the end of the season than of the year previous. Pear culture is, therefore, considered by them a precarious undertaking.

Although some persons are not successful in their cultivation of the pear, many have realized their expectations.

The following plans, adopted by one of the latter class, are recommended as suited to this locality:

The mode of operation is to select a piece of ground which has formerly produced good crops, or one which is in a condition to do so. He prepares it by working it well to the depth of eighteen inches; and in case the ground is heavy or wet in places, underdrain, so that whatever water may fall will not long remain, but will pass freely by, and thus constantly renew the supply of air and moisture to the

rootlets. No manure is added to the soil immediately before or at the time of planting, if the ground is in the condition above referred to ; but the remedy in case the soil is poor, is to top dress, which can be done at any time after the tree has formed new rootlets.

Stocks are selected of one or two years old from the bud, or before they begin to form fruit spurs, and are placed in the ground in the fall, at the proper distance apart, and at about the same depth as formerly grown. During the month of March, or before the buds begin to swell, he cuts from each branch about one-half of the growth of the previous year, which gives greater vigor and prevents a slow growth—the cause of short spurs.

Some trees when young, are prone to produce spurs, and little wood ; but by close trimming in the spring, the spurs are not likely to form, and the branches grow a reasonable length.

During the period of growth, the ground is kept free from grass and weeds, and in a loose and friable condition. The trees at the end of the season are all that can be desired. During the winter months no material is permitted to be around or near the tree which would form a harbor for mice, as they select the bark to feed upon when other food is not easily obtained.

In the following spring the tree is subjected to another trimming, which gives it a proper form and a growing condition, and renders a similar treatment unnecessary in subsequent seasons. In trimming, preference is given to that form of tree with one central stem or leader ; its length is reduced one-quarter. Each of the side branches is cut so that the ends shall be below the top of the leader six or twelve inches, according to size of the tree ; and if other limbs are below these they are shortened in like manner. As there are buds on the upper and lower sides of the branches, and it is desirable to have an erect growing tree, rather than drooping, the branch is cut off just above the bud, facing the leader, and not that on the lower part of the limb.

Most of the trees thus prepared will require very little subsequent attention ; especially those which are naturally

inclined to a regular and upright growth; but some may need a little further care, as, for instance, where the second bud from the end of each branch, and particularly the leader, has a strong tendency to be equal to the one above. The growth of this branch should be stopped when a few inches long, and the sap will then be transferred to the branch above.

Many persons hesitate to remove as much wood from a young tree as is necessary for its healthy development; when, in fact, the application of the knife, freely, with judgment, at the proper time, accomplishes more for its prosperity than quantities of manure so frequently and improperly used.

When the tree arrives at a proper age, the spurs enlarge, the blossoms set, the fruit follows, and the tree is in a condition to insure its future prosperity.

It gives me pleasure to furnish to the members of the Horticultural Society the above results of personal experience, extending over eight or more years, and I trust that they may encourage others to persevere in the raising of this deservedly favorite fruit.

The last extract is from the Essay of Mr. Merceron on the Propagation of the Grape. As there has been so much said about *new* processes of growing grapes, which are, in fact, almost as old as the grape itself, we commend Mr. Merceron's common sense practice to our grape growers. No doubt more grapes can be grown from a certain quantity of wood, and good ones, too, by using the single eyes, and cultivating under glass, but that the vines are not good when raised in any other way is absurd. Mr. Merceron says:

As regards the propagation of vines, it is now with me a very simple process. When I commenced six years ago, for the first time to grow vines, I began with a propagating-house, thinking, that to grow good vines successfully and profitably it must be done under glass; and although I had as good success as most people, and grew as good plants, they never gave me entire satisfaction, nor were they equal to the vines grown out of doors, nor, in my estimation, worth as much

money. I would not to-day accept the services gratis of any propagator to grow vines for me under glass.

But there is one fact you must bear in mind, that all vine-growers have not the good fortune to possess land as good as mine at Catawissa. A fine sandy loam of great depth, with a subsoil of five to six feet of pure loam such as is used in foundries for moulding sand; and I have never yet seen the drought affect it to any great degree.

There is but one grape of any value in the market that I cannot grow successfully by cuttings out of doors, and that is the Delaware; and they are such feeble growers that I prefer raising plants from layers. Of the following varieties I find no difficulty in growing them from two eyed cuttings, and many of them from single eyes, without any other preparation of my soil than ploughing and harrowing as fine as I would for turnips; Rebecca, Diana, Concord, Clinton, Crevelling, Iona, Adirondac, Franklin, Hartford, Taylor, Loomis's Honey, Maxatawney. I do not want it to be understood that I do not manure my ground. I manure well for grape cuttings, and as the digging of the vines in the fall (with forks,) trenches the ground pretty well, I follow two years with strawberries. After the ground is ready, I stretch a line, (I have one 300 feet long for the purpose,) then pass a rake along the line to clear away lumps, if there should be any, and then insert the cuttings, plunging the upper eye out of sight; and, before the line is taken up tramp both sides firmly with the feet.

I plant cuttings six inches apart in the rows, and the rows two feet six inches apart, and worked with hand cultivator and hoe. I prefer cuttings six inches long, but plant a great many not over four; I prefer two-eyed cuttings. I prepare my cuttings in November, already for planting in the spring, and pack them away in boxes with the tops downwards, using old tan-bark sifted for packing, and covering the boxes with tan or earth.

On no account must the pruning be delayed until the spring. Even the Concord is injured for propagating if left on the vines all winter, unless the winter is a mild one. I planted 3,000 cuttings last spring of Concord that were taken

from the vines some time in March, and 25 per cent. of them failed to strike, while of those cut in November not over 2 per cent. failed to grow.

The cultivation of the grape has, of late years, and does now occupy a large share of the attention of the people of this country, and very large sums of money are invested every year in planting vineyards; any article on grape culture is eagerly read by all who are interested, hoping to find something that will enlighten them.

I have never taken any special pains in the cultivation of my own vines. Six years ago last spring I planted my vines, merely ploughing and harrowing the ground, putting on a fair coat of manure, and a little lime, at the rate of 30 bushels to the acre. All the cultivation they have had since, has been merely to keep down the weeds. There has never been a horse or plough in it since. I have always had good crops of grapes, and this year of great failure, I have a fair crop of fruit, although my vines last winter were not laid on the ground as they generally are, and a great deal of the wood was injured by the severe weather.

I am of the opinion that our vines are cultivated too much. I have some vines in odd corners, where it is impossible to give them any cultivation at all, and on which I never fail to get an abundant crop of fruit.

Mr. Fuller says, page 160 of his "Grape Culturist," "The greatest obstacles in the way of cultivating the grape in gardens, particularly in cities and villages, &c." Now, in the city of Philadelphia they are generally successful in raising grapes, even when we fail in the country; and what a small number of vines in city yards get any cultivation at all!—why, in two-thirds of the vines the roots are covered with pavements of brick or flags, and the light of the sun never reaches them. Three years ago, on my way to the Fruit-growers' Meeting at Lancaster, I stopped a few hours in Sunbury, and in the garden of a lady there I saw such a vine of Isabella as I had never seen before, both in productiveness and size of fruit. She very kindly gave me some of the grapes, which I took to the meeting, and there was not a bunch of Hamburgs on the tables that could equal them in

size of berry. The roots of the vine grew entirely under a brick pavement.

If ploughing and tearing through grape roots is so beneficial, why do not gardeners cut and slash into their grape borders? But do they do it? No. They mulch them well, and that is what they want, in my humble opinion.

I think that our vines are pruned too much in summer. I am certain that two varieties, the Concord and Crevelling,—which, by the bye should grow alternately on the same trellis—do not want to be touched after they are pruned in the fall; but let that pruning be thorough, and no more wood left on than you want to fruit. The greatest trouble I have to contend with is the burning of the leaves; this is particularly the case with Delaware. With me they lose their leaves so early in the year, that on many vines at this writing, (September 1,) there is not a particle of ripe wood on them, nor ever will be, and the vines will have to be cut down to the ground this fall, to produce new wood for another year. The only vine of Delaware that I have that has any good fruit on it, is one which, on the upper slat of the trellis, has two strong canes of Norton's Virginia growing on it, the fine foliage of which with the laterals drooping over either side, fully protected the Delaware from the scorching sun; the leaves were not burnt up, and the fruit fine and well colored.

Now I have heard a great many persons say, when their vines were burnt as I describe, that the thrip had done the mischief. This year I had scarcely any thrip at all, and I feel certain that my Norton's Virginia saved one good vine of Delaware grapes. I shall now try the experiment of planting a Norton or Franklin, (both fine wine grapes,) between my Delawares, and arrange my trellis in such a way that they shall serve the purpose of a sunshade to the tender leaves of the Delaware, and other varieties that need such protection.

The Report, we should have said, opens with an excellent address by the President, D. Rodney King, Esq., and closes with a short history of the Society, from which we learn that the income of this Society is derived from the annual con-

tributions of its members, at the rate of three dollars each, and from life memberships, of twenty-five dollars each, together with the interest on its investments, amounting to about twelve thousand dollars.

The last list of members' names published was in 1844, and comprised above eight hundred of our most respectable citizens, together with a considerable number of honorary members, residing in various parts of the world, who were elected for their scientific attainments, and for their devotion to the cause of horticulture.

The number of members is not so large at present, as this Society, in common with others of a similar character, has, of late, felt the depressing influence of the times, but its members will not permit its elevating and refining influences to be lost to the community, but will continue, by encouraging the peaceful pursuits of horticulture, to inculcate and keep alive a love for the beautiful in nature, and a reverence for its Divine Author.

R E D L E A F .

BY H. W. S.

To the few remaining persons who were in the habit of reading Loudon's *Gardeners' Magazine*, some 25 or 30 years ago, an account of this charming place, then, as now, the seat of Wm. Wells, may not prove uninteresting. If such of your readers as possess the back volumes of Loudon (some 30 odd years ago) will turn to this period, they will find a very elaborate description of Redleaf, with very copious illustrations on wood, (Vol. XV.) Mr. Loudon called it then the most "picturesquely beautiful place in England," and I think it fully deserves that reputation now, although 25 or 30 years have passed since Mr. Loudon's visit.

The place,* though not occupied this year by Mr. Wells, is still admirably kept up, and looks precisely as it does in Mr.

* Redleaf, seat of Wm. Wells, near Penshurst, the birthplace of Sir Phillip Sidney, about five miles from Tunbridge Wells.

Loudon's illustrations. Even the large flower garden in diamond pattern beds, edged with tile, is the same, as well as the rustic conservatory, filled with some splendid specimens of *Araucarias*, *braziliensis*, *excelsa*, *Cookii*, *Bidwellii*, and some fine *Cupressi Govienia*, *funnebris*, and *pendula*.

The beautiful *Dacrydium Cupressinum*, which I have been trying the past two years to obtain, *Dacrydium Franklinii*, which is nearly hardy here, *Casuarina equisetifolia*, and a new and even prettier variety, very weeping.

In one of the greenhouses we were fortunate enough to see a splendid specimen of the Sikkim rhododendron, *Aucklandii*, an exquisite white flower, with most delicate stainings of blush. The truss was some twenty inches in circumference, there being five florets of four inches wide each on every truss, and the perfume so delicious and powerful as to pervade the whole house, seventy-five feet long. Though this plant, raised from seed by the present gardener, was twenty years old, yet it had never bloomed but once before, this being the second, and the only flowering plant in England. There were many other Sikkims here, such as *Edgeworthii*, *Nuttallii*, *Falconerii*, *argentea*, &c. Nothing, however, compared with *Aucklandii* in beauty and fragrance; *argentea* being the next valuable. Besides these rhododendrons, the whole back wall, seventy-five feet long by fourteen high, was covered by splendid specimens of Espalier camelias, completely covering the wall with the finest possible foliage and bloom.

The ornamental grounds are as beautiful, and in as exquisite keeping as it is possible to conceive. About twelve acres, kept by nine men and a lawn machine, two of the men having been here 50 years.

Mr. Loudon used to allow one man to an acre of ornamental grounds.

The inevitable wire fence on a Ha Ha, separating the ornamental ground from a beautifully undulating park of many hundred acres, grazed by sheep, and adorned by a fine sheet of water, the ends of which are very artistically concealed.

The collection of trees, though not as large as many we have seen, yet was very interesting, as containing older and finer specimens, most of them being the largest of their sort in England. There were two Deodar cedars, 58 and 65 feet high, which had quite assumed the habit and character of Cedars of Lebanon.

A fine *Cunninghamia sinensis*, 26 feet in height, with a stem five feet in circumference, the largest I have ever seen. This tree had unfortunately lost its leader in a great gale, about three weeks ago, and the ravages of which we meet everywhere; a gale "that had slaughtered the finest trees in England," the gardener said.

Near the *Cunninghamia* stood a *Cryptomeria*, 30 feet high—a perfectly green pyramid, from bottom to top; an *Abies Douglasii*, 70 feet, and *Abies morinda*, 65 feet—both sent to Mr. Wells by Mr. Douglas; an *Abies Smithiana*, 50 feet, and a grand specimen of *Abies Menziesii*, of over 70.

There were several other things of great interest, a magnificent *Thuja aurea*, and an immense mass of *Juniperus recumbens*, 30 or 40 feet in circumference, and two or three feet high, a perfect mat, and so thick that Mr. Douglas, in his visits to Redleaf, would throw himself upon it exclaiming, "How often has this plant been my bed in North America." The most interesting tree is, however, an immense *Pinus ponderosa*, nearly 80 feet, a superb specimen, and by far the largest and oldest in England. The seed from which this tree was raised was sent to Mr. Wells in a letter from California, written by Mr. Douglas, and taken by him from a cone shot down by his rifle, only a day or so before his unfortunate death, from having fallen into a buffalo pit, where his skeleton was found some months after, if I remember aright. And lastly, among the evergreens is a *Wellingtonia*, like the *Cryptomeria*, a perfect pyramid, 26 feet 8 inches high, the but at the surface 7 feet in circumference, planted in 1855—11 years ago. This was the second *Wellingtonia* planted in England, purchased when two inches high, at one guinea an inch, turned out of a pot when a foot high in its present position, near the lake in low damp soil. After having been planted some three months it suddenly disap-

peared, and though the most diligent search was made on the place and in the neighborhood, it could not be found. After some weeks it was accidentally discovered in a flower-pot, planted in solid manure, in the chamber of a poor woman of the village, whose children, in gathering faggots, had taken a fancy to it, and thinking it no harm had pulled it up and carried it home ; but for this check the gardener thought the plant would have been four feet larger.

The collection of dwarfs is quite large here. Among them is the largest and best grown specimens of *Abies Clanbraziliensis* (Lord Clanbrazil's pine) in England, 5 feet high, and at least 15 in circumference. The collection of deciduous trees is also very fine. Some beautiful cut-leaved weeping beech, 50 or 60 feet high, and splendid masses of rhododendrons, many of the early ones in bloom. The turf, which is very soft and mossy, is cut about once a week. Take it all in all I do not know a more interesting place to Americans, or one more instructive. The house is not so large as many of our country houses on the Hudson River, and there is less ornamental ground than many of these have, but there is an amount of refined cultivation that is positively astonishing.

INTERMIXING APPLE AND PEAR TREES.

BY D. W. LOTHROP, WEST MEDFORD.

INEXPERIENCED planters, in setting a garden of half an acre and upwards, are frequently impressed with the idea that it is desirable—for some reason not clearly distinct in their own minds—to intersperse apple and pear trees in the same line, or to plant alternately. I was led into this error, as I conceive it to be, but have partially remedied it. If apple trees were planted forty feet apart, the force of one objection would obviously be broken. But where they are not more than twenty-five, or, as sometimes they are, not more than twenty feet apart, a pear tree has but a poor chance to grow, even should it get well started, in competition with the roots, as well as branches, of so rapid a grower and so gross a feeder as the apple. And this is particularly true

where the pear is of a feeble variety. A Vicar of Winkfield could stand the competition better. Where an apple tree is ten or fifteen years old, the idea of then setting a pear within ten or twelve feet of it is unmitigated folly. The writer was tempted to do this a few years ago, for the purpose of filling the corner of a walk in one case, and a gap in another; but though the young trees were well cared for, they did not grow six inches in three years! In taking them up, a mass of fibrous apple roots was thrown out, and this explained the mystery. I had been cultivating the apple instead of the pear!

We think, in a garden well exposed to the wind and sun, twenty-five feet apart will do for the apple, at least one way. Peach trees might perhaps as well be interspersed as any, for they are transient, as cultivators have good reason to know. At this distance, it is true, the apple trees will nearly touch in about fifteen years. But this is no objection; besides they are better enabled to resist the high winds of autumn, which frequently shake off so much of their fruit.

When apple trees are planted, we think it best to use the poorest soil in the location, the medium for pears on their own roots, and the best for those on the quince. All of them deserve different treatment, as regards distance, culture and pruning, and this is the reason of their separation. Pear roots are hardly less intolerant of the quince root than the apple of the pear.

There is much difference, it is true, in the growing force of different varieties of pears, but the difference is of less moment than that between the apple and the pear. In the vigor of the many varieties of the grape there is a greater contrast. Some would cover a quarter of an acre in ten years, while others can only with difficulty be made to grow at all. In fact, the proximity of trees and vines is an important study.

The amateur or accidental cultivator, however, is frequently left to make a choice of evils, in the setting of both fruit and ornamental trees; but it is well to have some ideas of their proper arrangement for growth or effect, else any of them may be blindly placed, as is often done, anywhere a pick and spade can make a hole.

O R C H A R D - H O U S E S .

FROM THE GARDENERS' CHRONICLE.

THE loss of the peach crop for the present year will naturally turn the attention of lovers of this delicious fruit to the orchard-house, as the simplest and surest plan of insuring an annual crop of fruit. A few years ago the subject engaged wide attention, but more favorable seasons have prevailed, and peaches have been abundant, cheap and good. New Jersey and Delaware have furnished New York and the east with thousands of bushels, and the special cultivation of a fruit, so plentiful at all times, was not considered of so much importance. Orchard-houses have been neglected, and their value for the culture of the peach, as well as other fruits, has not been truly estimated.

It is a common remark with the older cultivators, that we formerly had plenty of peaches,—peaches every year,—and it is thought that our seasons have changed. But we are under the impression that it is the memory which is at fault, and that the crop is as constant as it has been at any time during the present century. If a reliable record could be obtained in any way, we think it would be found that the crop is as certain now as twenty-five years ago. Usually, in the great extent of country over which the peach is largely cultivated, this failure only takes place in some portions of it, and that which escapes supplies an abundance—for the peach bears so liberally that the crop is either very large or none. Certainly not over a dozen years ago, we had fifty trees, which bore an immense crop, and the price in the market would hardly pay for gathering.

This year even New Jersey, and we believe a part of Delaware, has suffered by the severity of the winter, and the crop will be light. Those who have good orchard-houses need not care for this, but those who have not will feel the loss of so luscious a fruit.

M. H. Simpson, Esq., of Saxonville, whose experiments with the grape we have so often noticed, is trying the novel, or Dutch plan, of training the trees horizontally on a low flat trellis, covering them with straw or hay in winter a foot thick,

to prevent the severe freezing and the buds. This year Mr. S. informs us the trees look very promising, and full of perfectly developed buds and blossoms. But this, as he admits, is a laborious process. The simplest mode to ensure a good fruit is the orchard-house, and the growth of trees in pots or boxes. In this way success is made certain, and we advise all who desire to have peaches to cultivate them in the orchard-house. Besides its adaptability for peaches, the pear, apple, nectarine, plum and cherry, can be grown, as mere objects of beauty, or as luxuries for the table. In the former case delighting the eye with their varied beauty, throughout the summer, and in the latter supplying the most healthy fruits for three or four months of the year.

These remarks are suggested by the perusal of the following excellent paper on orchard-houses:—

Although, being an amateur, I cannot expect to throw any new light upon mere manipulatory details with respect to these structures, still the success which has attended my outlay, and my attempts at fruit growing upon a somewhat extensive scale, may tend to give many an aspirant in the orchard-house system of culture some little confidence, by proving that patience and perseverance, assisted by an ordinary amount of intelligence and care, may overcome obstacles which at first sight appear insurmountable to the unreflecting. Take, for instance, the idea of growing splendid fruit of the more delicate kinds, such as grapes, apricots, nectarines, and peaches, in pots—a mode of treatment which at the first glance seems so subversive of all the important laws of nature, which give unrestricted root-room, as to almost warrant the ridicule it first met with. And yet this system will in time become, if not universal, at any rate a common object of interest in almost every garden.

By accident I met with Mr. Rivers's valuable little work on Orchard-house Cultivation, in the autumn of 1861, and being about to build a wall some 150 feet long, in place of an old privet hedge which divided my garden from a public bye-lane, I determined to cover the wall with glass, and boldly try the experiment so successfully carried out by

Mr. Rivers. My wall being built by January, 1862, I purchased what timber I required, and being something of an amateur carpenter, I commenced, with the aid of a general servant, to cover the first 60 feet of the wall. I confess that the work I had undertaken was very much harder than I had anticipated, but by dint of perseverance in the few leisure moments I could spare from business engagements, I completed the first portion in two months. I obtained a glazier to put the glass in, and a painter to give it the last finishing touch. Altogether I was rather proud of my orchard-house, for although it was not perhaps as faultless as the last 70 feet built the next summer by a regular carpenter, having no time then at my own disposal, still it was a substantial and useful structure, and was made perfect by glass doors at each end, zinc ventilators at the back, and shutters in the front, so as to insure perfect ventilation. The expense, including glass, and the value of some timber I had by me and had worked up, was about 10s. per lineal foot, exclusive of the bricklayer's bill for the wall. I then purchased some peach, apricot, nectarine, pear, and plum trees from various nurserymen. My house is now 130 feet long and contains about 200 trees, all in the most exuberant health, and after four years' treatment literally covered with blossom buds. Immediately on receiving my trees I repotted them in maiden loam, and in 1863 I had a most abundant crop. In the autumn of that year, I obtained a large quantity of night-soil, and had it thrown upon some garden ground from which potatoes had been removed. This was well turned over, and with it I have repotted my trees each autumn since, keeping strictly to the hard ramming recommended by Mr. Rivers. Each succeeding spring has witnessed a most splendid bloom on every tree, followed invariably by a magnificent crop. Every spring, after constant artificial fertilization, when all danger from frosts is over, every plant is turned out of doors to ripen its fruit in succession, which I find by experience to greatly improve the flavor of the fruit.

After four years of careful and successful culture my 200 trees show, at the present moment, an unusual amount of vigor, with every prospect of bearing another splendid crop

of fruit. My rule has been to paint them well with Gishurst Compound in the winter, and to syringe them with pure water twice a day in the summer until the fruit begins to color. Since the erection of my orchard-house, I have never allowed the ventilators to be closed, except on two or three nights of very severe frost. I have thus ensured in spring, summer, autumn, and winter, a free current of air through the house, to which I attribute much of my success.

So far as my experience goes, the whole success of the orchard-house system of cultivation depends upon the summer pinching, the autumnal potting, the hard ramming, perfect ventilation, and a plentiful but judicious supply of water to roots and leaves during the summer and autumn. Of peaches, having some of the best known kinds, I think for extreme beauty of color, size of fruit, and superb flavor, that the *Reine de Vergers* bears off the palm. *Pitmaston Orange*, *Elruge*, and *Hunt's Tawny*, I class first as nectarines, for good bearing qualities, and fine flavor.

Since the erection of my house a great advance has been made, both as regards their cost and suitability, in these structures. I should never again build, but get Sir Joseph Paxton's patent houses, or what will be I think, to me, equally good and cheaper—those brought out by an ingenious tradesman of this town—Mr. Tucker—which answers all the purposes of the more expensive structures. The amount of head-room given by the almost semicircular roof in the houses last named is an important advantage compared with having a low roof, and being compelled to lower the walk inside to give height.

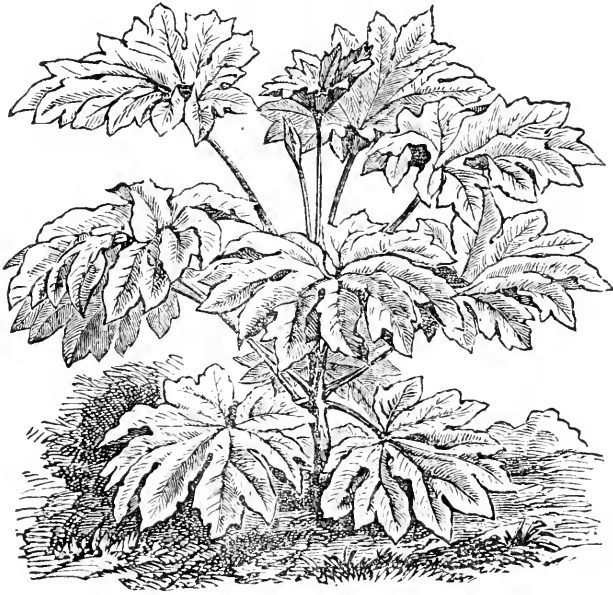
Everyone interested in gardening must, I am sure, hail the gradual reduction in the price of horticultural buildings of this description, as a very great public boon, inasmuch as it will render the delicious peach, apricot, and nectarine more accessible as table fruits to the homes where they are now regarded as forbidden luxuries; to say nothing of the interesting and profitable employment such structures may be made to furnish to the amateur gardener, preventing as they do, the mind from lying fallow even during the few leisure moments of a busy life.

ARALIA PAPYRACEA.

BY THE EDITOR.

THE paper tree (*Aralia papyracea*) is of recent introduction, and has been cultivated as a greenhouse or stove plant, but, like many others, it has been found perfectly adapted to out-door culture in the summer season, and it has become one of the most beautiful of the ornamental-foliaged plants employed by the French cultivators in the decoration of the Parisian gardens.

Originally from China, it is a dwarfish tree, growing 8 to 12 feet high, with a woody stem. The leaves are very large, 18 inches in diameter, alternate, and supported on long



9. ARALIA PAPYRACEA.

peduncles, and they are deeply cut, somewhat in shape like the *Ricinus* (Castor Oil bean.) They are of a deep green, but covered all over with a mealy powder. It is their large size, handsome shape, and peculiar mealiness which renders this species so highly ornamental.

The *Aralia papyracea* (FIG. 9) is still a rare plant, but as it is easy of propagation, and grows rapidly, it will soon become abundant, and will undoubtedly rank with the *Wigandia*, and other fine foliaged plants, for the decoration of the lawn and flower garden in summer, and the warm greenhouse in winter.

FLORICULTURAL NOTICES.

THE JAPANESE MAIZE.—This is really a valuable acquisition ; young plants, now some foot or so high, have a beautifully variegated foliage, though only in a four inch pot. What it will be when planted out in good soil, and the leaves attain their true dimensions, may be imagined from the smaller specimens. As a striking object for back lines of flower beds, or in groups by itself, it will form a rich contrast with the cannas, and other ornamental leaved plants.

THE NEW DOUBLE MIMULUS.—These singular shaped flowers, conspicuous for their distinctly spotted flowers, have been so much improved by cultivation that they are becoming popular, and hold the rank of bedding plants. The double sorts are quite new, and odd enough. Instead of having the petals increased in quantity as with other double flowers, they are simply one flower within another, like the hose-in-hose polyanthus. Our plants, yet small, are covered with blossoms, and the two corollas have a curious and very pretty effect.

886. **HABRANTHUS FULGENS** *Hook.* BRILLIANT-FLOWERED HABRANTHUS. (Amaryllidaceæ.)

A greenhouse bulb; growing one and a half foot high; with scarlet and orange flowers; appearing in spring; increased by offsets; grown in light rich soil. *Bot. Mag.*, 1866, pl. 5563.

This is the most magnificent of all the Habranthus, having a large head of flowers, nearly a foot over, of the brightest orange scarlet, shading to yellow at the base of the sepals. It flowered with Messrs. Backhouse of York, England, last year, in April. (*Bot. Mag.*, March.)

887. **DENDROBIUM DIXANTHUM** *Rchb.* DOUBLE-TINTED YELLOW DENDROBIUM. (Orchidaceæ.) Moulmein.

A stove orchid, with yellow flowers. *Bot. Mag.*, 1836, pl. 5564.

This is another of the free growing and flowering orchids, blooming in the early part of summer, under ordinary treatment. It has grass-like leaves, and long spikes of pale and bright yellow flowers. (*Bot. Mag.*, March.)

888. *GLADIOLUS PAPILO* *Hook.* BUTTERFLY-FLOWERED GLADIOLUS. (Iridaceæ.) Cape Colony.

A half-hardy bulb ; growing three feet high ; with black and spotted flowers ; appearing in spring ; increased by offsets ; grown in light rich soil. *Bot. Mag.*, 1866, pl. 5565.

This is a new Gladioli from the rich country of bulbs, Cape Colony, and received at Kew Gardens, where it flowered in 1861. It is the "most beautiful, though not the most gorgeous" of all the species of this fine group that has hitherto been made known. The colors are versatile, as its name indicates, like the beautiful tints of the gaudy butterfly. The flowers are not over large, but they are of a delicate blush, with roundish petals, and the three lower ones have a large bold distinct blotch of deep purple in each, in the way of some of the spotted pelargoniums ; the base of these petals, that is, besides the spots, shade off into pale yellow. Altogether, it is a fine thing, and will become a great acquisition. (*Bot. Mag.*, March.)

889. *PERISTOPHE LANCEOLATA* *Nees.* LANCE-LEAVED PERISTOPHE. (Acanthaceæ.) Moulmein.

A stove plant ; growing two feet high ; with purple flowers ; appearing in winter ; increased by cuttings ; grown in loam and leaf mould. *Bot. Mag.*, 1866, pl. 5536.

A very pretty winter-flowering plant, like most of the *Justicias* to which it is allied, having dense spikes of purplish flowers, which appear in midwinter ; though not particularly showy, the period of its blooming renders it desirable in collections. (*Bot. Mag.*, March.)

890. *BATEMANIA GRANDIFLORA* *Rich.* LARGE-FLOWERED BATEMANIA. (Orchidaceæ.) New Granada.

A stove orchid. *Bot. Mag.*, 1836, pl. 5567.

A very striking species, in general appearance somewhat like the *Cypripedium*, with white flowers, singularly barred and striped with purple, with the lip beautifully fringed. (*Bot. Mag.*, March.)

891. *PEPEROMIA MARMORATA* *Hook.* MARBLE-LEAVED PEPEROMIA. (Piperaceæ.) South Brazil.

A stove plant ; growing a foot or more high ; with green marbled foliage ; increased by cuttings ; grown in light rich soil. *Bot. Mag.*, 1836, pl. 5568.

A very fine species of a genus generally considered only

botanically interesting. *P. marmorata* is, however, a really fine thing, for unlike most other variegated leaved favorites, this retains more or less of its beauty throughout the year. The leaves are handsomely formed, of an ovate obtuse shape, tapering to the point, five nerved, the margins of the nerves being of a black green, with the intermediate spaces of a pale green, more or less marbled. It was received from South Brazil by Messrs. Veitch, and is quite new. (*Bot. Mag.*, March.)

892. *ERICINELLA MANNII* *Hook.* CAMEROON'S MOUNTAIN HEATH. (*Ericaceæ.*) Africa.

A greenhouse plant; growing two feet high; with small crimson flowers; appearing in summer; increased by cuttings; grown in heath soil. *Bot. Mag.*, 1866, pl. 5569.

A heath-like looking plant, belonging to the native group, with very small minute leaves, the end of every branchlet covered with round crimson or scarlet flowers. It was found growing on the tropical mountains of South Africa, by Gustav Mann, and will probably prove a valuable acquisition. (*Bot. Mag.*, March.)

893. *TACSONIA VAN VOLXEMII* *Funk.* VAN VOLXEM'S PASSION FLOWER. (*Passifloraceæ.*) South America.

A greenhouse plant; growing ten feet high; with rosy scarlet flowers; appearing in winter; increased by cuttings; grown in light rich soil. *Bot. Mag.*, 1866, pl. 5571.

“One of the most striking and beautiful plants” hitherto introduced into European gardens, of easy cultivation, and continuing in flower for a long period. It promises to rival the *Lapageria*, if it does not surpass it. It has a deeply three lobed foliage, and the flowers are produced singly from the axil of the leaves, upon a long and slender peduncle; each flower is from five to seven inches in diameter; color rich, deep bright crimson, or rosy scarlet. It is a native of New Grenada, where it is found in the temperate region, resisting, according to M. Volxem, the freezing point in its native clime. It has a neat and free habit of growth, and will undoubtedly prove one of the best of all the *Tacsonias*, both on account of its rich color and free and abundant bloomer. (*Bot. Mag.*, March.)

REVIEWS.

NEW BOOK OF FLOWERS, by Joseph Breck. New York: O. Judd & Co., 1 vol., pp. 478.

This is a new and almost rewritten edition of one of our oldest works on Flowers, first published fifteen years ago, and now brought down to the present time, embracing all that is new or recently introduced.

“While most of the book,” remarks the author in his Preface, “is entirely new, and the arrangement greatly improved, some parts of the old work have been embodied in its pages, where it was thought no improvement could be made.”

The volume, like the previous edition, contains an account of all the popular and beautiful garden flowers, plants and shrubs, alphabetically arranged, with brief directions for their propagation and cultivation, and it may be considered as a safe guide to the inexperienced in the general management of the garden.

The work is neatly printed, on good bold type, and illustrated with several engravings.

ESSAYS ON THE SOILING OF CATTLE, illustrated from experience, and an Address, containing suggestions which may be useful to Farmers, by Josiah Quincy, with a Memoir of the Author, by Edmund Quincy. Boston: A Williams & Co. 1866. pp. 120.

In addition to the very valuable Memoir, and tribute to the memory of the author, by Edmund Quincy, of the deepest interest to all who appreciate the services he rendered to agriculture, the volume contains the Essays of Mr. Quincy, the first prepared in 1819, at the request of the Trustees of the Massachusetts Agricultural Society, and the last in 1852, at the request of the Trustees of the Norfolk Agricultural Society. These are now published at the solicitation of friends of agriculture, and of the system therein recommended.

We need not comment upon this volume. The Essays are highly valuable, and their preservation in their present form will be highly acceptable to every one interested in the prosperity of the agriculture of Massachusetts.

THE PHENOMENA OF PLANT LIFE, by Leo. H. Grindon. Boston: Nichols & Noyes. 1866. 1 vol. pp. 94.

A delightful Series of Papers on Plant Life, taken from recent numbers of an English periodical, the "Intellectual Repository."

The work is in Chapters, and commences with winter, and speaks of the wonderful winter life of plants. Then follows spring, teeming with its breaking buds and blossoms. Then summer, and ending with oak, the "ancient and noble" among the families of trees.

We only regret our inability to make extracts from this much interesting volume, and commend it as one of the most pleasing books of recent publication.

General Notices.

TABLE DECORATIONS.—I was lately present at a wedding breakfast, where the arrangement of the flowers upon the tables attracted much attention and excited many comments. The "high table" was placed across the top of the room, and from either end of it a long narrow table ran down each side, leaving the middle for the servants to wait on the guests. The massive cake occupied the centre of the high table, and was surrounded by a ring of 24 glasses, each containing one red or one white camellia, of great size and purity of color, the colors being arranged alternately. On either side was a tall elegant vase, in which were placed fern fronds only, some large and arching, others long and drooping. At each end of this table was a "March" glass, having in the upper dish white flowers and small ferns, with three bunches of white grapes hanging from its edge, and having purple and white cinerarias relieved with a few other flowers in the lower dish, while the stem was partially concealed with sprays of *Acacia junipera*. The same arrangement of keeping the white flowers up above and the colored flowers nearer to the cloth, characterized all the vases upon the side-tables, which, however, were noticed, not only for the light effect which was thus secured, but for the

height which had been obtained by building up small dishes and vases, and sparingly dressing them with flowers and delicate ferns, by which means lightness and gracefulness were attained without interfering with the view or conversation.

But the decoration that attracted most attention was the only one that stood in the drawing-room. A very large silver epergne was placed upon an oval table, which was covered with a crimson cloth, and stood in a bay-window, with room to walk round the table. This epergne had six branches, each terminating in a cut-glass dish of about four inches diameter. The six dishes contained no other flowers than pure white azaleas, the monotony of which was relieved by varying the shades of the fern-fronds which were interspersed amongst the blooms, one dish containing the pale yellowish-green *Adiantum assimile*, another the dark-green *Ad. Capillus-veneris*, and another young fronds of the dull green *Ad. pubescens*.

In the large trifle-dish which crowned the epergne had been placed an enormous tumbler, the outer sides of which had been banked up with wet sand and covered with dark green moss. This moss served to keep moist and support six magnificently-grown white camellias, each enriched with three or four noble leaves; below them were, alternately, small fronds of *Dicksonia antarctica* and large pinnæ of *Cibotium Barometz*, which hung over between the dishes of azaleas, and thus brought them prominently into view. The tumbler at the top contained two large fronds of *Lastrea augescens* (which arched over more than two feet,) together with one or two fronds of *Nephrolepis exaltata*, *Asplenium lucidum* and *flaccidum*, *Davillia polyantha*, *Polystichum falcinellum*, and *Adiantum trapeziforme*; amongst which were half-a-dozen handsome blooms of *Eucharis amazonica*. A few pieces of *Nephrolepis pectinata* were introduced as a contrast to the broader foliage of the other ferns, while a frond of *Goniophlebium subauriculatum*, which could not have been less than five feet long, curled grandly out from amongst its allies, and twisted gracefully down between two of the dishes of azaleas and round the stem of the epergne. It was truly a bridal arrangement of flowers, to which the dark green of the carpet, and the crimson velvet couches and chairs, afforded a contrast that could not have been improved upon.—(*Gard. Chron.*)

HARDY EDGING PLANTS.—But we want subjects that will “grow anywhere,” and cannot beat in this way some of the variegated ivies. They make neat and bright margins, and look often fatter and better on the ground than on a wall. *Hedera marginata robusta* is probably the best; and good also, and with a yellowish tinge, *H. marginata major*. Doubtless there are other ivies would do well in this way. Certain it is that these will not disappoint, and I know nothing to make a better permanent edging plant. *Vinca* “*elegantissima*” is good, if trimly pegged in. There is a newish kind of “*Golden Sage*,” which though not decisive in tone, yet forms a very pleasing medium-sized edging, quite distinct. *Arabis lucida variegata*, *alpina variegata*, and *albida variegata*, and the variegated *Alysum* are too well known to need more than being just mentioned. *Arabis*

procussens variegata is as good as any of them, but I believe scarce. *Euonymus radicans variegata* I have recommended elsewhere. Wherever the silvery and pleasing *Androsace lanuginosa* grows freely in the open air, it might be made an edging plant of. I remember having seen it very pretty in front of a mass of *Commelyna*, with Mr. Bain. And wherever it would do well, so would the pretty alpine *Pinaria*, which in a suitable soil is nearly always in flower. *Sautolina incana* is likely to prove a good thing. *Veronica candida* is a prime, dwarf, hardy edging plant. For a very dwarf, very neat, and white edging commend me to *Antennaria tomentosa*; it is scarce yet, but is easily increased. The new *Aubrietia variegata* is a very likely subject indeed. *Cerastium grandiflorum* also makes a pleasing edging and a good border plant, along with *tomentosum* and *Riebersteinii*. *Achillea Clavennæ* is worth trial; in any case it will be useful for rockwork or alpine arrangement. *Artemisia maritima*, the Sea Wormwood, pinched and trimmed a bit, will form a capital edge. *A. argentea* is an excellent thing for the same purpose, but is not quite hardy, and must be put out with the *Centaureas*, &c. The *Violas* "montana" and *lutea* have proved distinct and useful bedding and edging plants, and will doubtless be much used, particularly the first mentioned. It is probable that they, like some other herbaceous plants that have proved useful for bedding, will be much best when planted out yearly, like tenderer bedding stuff. And, by the way, do not many of our common bedding plants owe their continuity of bloom to this fresh planting into fresh ground yearly? If they remained over the winter in beds, as hardy plants do, would not some of them flower right off in the early summer? It is well to bear in mind when dealing with hardy bedding subjects, *Achillea aurea* is a hardy plant, which, the first year of being planted, flowers continuously, and is attractive till late; but leave it in the same soil and position all the winter, and next year you will find it bloom, "and have done with it at once," like many herbaceous plants.

On the great merits of such things as the *Iberises*, *Erica carnea*, dwarf phloxes, *Silene alpestris*, *Saxifraga oppositifolia*, the hoary and other *Helianthemums* for making permanent edgings round choice shrubbery and in other places, I have already remarked. A mixture of the blue and white *Campanula carpatica* would be very charming among such. There is one *Dianthus* which does not appear to be so grateful to the wireworm as other species, and being next in beauty to *Alpinas*, is well worth trying as an edging plant. I allude to *D. petræus*. Nothing surpasses in beauty a good mass of this, and it appears to grow without difficulty anywhere. I would particularly recommend the botanic garden to increase it, and plant a band round his *Caryophyllaceous* bed.

In addition to low shrubberies, &c., does not the rose ground often offer capital opportunities for planting permanently lines of the fine spring plants? How many are there with naked margins along which *Iberis*, *Arabis*, *Gentian*, *Aubrietia*, *Alyssum montanum*, the Sea Pink, and dozens of others would grow and flower beautifully. When I say the Sea Pink, I mean a fine crimson variety of it, not either of the common forms, for

though pretty, they are poor indeed when compared with this, which is plentiful at Glasnevin.—(*Gard. Chron.*)

TRITELEIA FOR THE SPRING GARDEN.—In treating of the best spring flowers generally I have before recommended *Triteleia uniflora* in your columns, but till this year I had no adequate idea of its beauty and excellence as a hardy spring bulb. I find it is not only a first-class spring flower, but that it lasts longer, much longer, in beauty than any other with which I am acquainted. It came into flower with or before *Scilla sibirica*, and is now, during the last days of April, still in effective flower, while the vivid blue of the Squill has been of course long replaced by green leaves. It is a native of Mendoza in South America, and has strap-shaped spreading leaves, above which the flowers stand clear. They are from about six to eight inches high, nearly an inch and a half across when the plants are not grown too thickly; color white, with delicate descending bars of pale blue on the inside. The leaves smell exactly like those of an *Allium*—the flowers like those of the Persian Iris—a delicate and grateful perfume. They open with the morning sun, and are conspicuously beautiful on bright days. In taking up a few plants the other day I found that each plant was giving off offsets as free and numerous as a young Shallot, while the leaves seem to have passed through the not very agreeable spring with less injury than those of our oldest and hardiest spring bulbs, and this in a cold soil and very exposed situation. An exposed position is usually a very bad one for hardy bulbs, as the leaves get lacerated, and the bulbs suffer in consequence; but from lying nearly flat on the ground, the leaves of *Triteleia* appear to escape injury from this cause, and it multiplies at quite an unusual rate. Whether it is hardy enough to withstand such a winter as that of 1860 I cannot say, but I have had it perfectly safe for three winters past in stiff ground. It does still better in light or sandy soil; and in Mr. Farmer's garden at Hornsey, which now contains almost everything in the way of spring flowers, it proved the most satisfactory of all, notwithstanding that some hundreds of Mr. Mackay's Squills were entered in the competition. It is, I believe, to be had cheap from the Dutch.—(*Gard. Chron.*)

FUCHSIA-GROWING.—The plants are prepared for exhibition in this way. The day before the show a supply of stakes, thin paper, and Cuba bast must be got ready. Put the stakes in the soil, gather three or four bunches of bloom together, put the paper round them, and fasten the paper to the top of the stakes. All the blooms must be done in this way to make them travel well, and if they are carefully tied, and three large nails driven into the bottom of the van round the bottom of each pot, the plants will travel any distance without damage. When they arrive at the show the paper has to be taken off, and the flowers will then look as fresh as they did before they started. Place them on the stage, the tallest at the back, and very much raised, if they are three deep, so they will show themselves; if only two deep, of course they will not require so much. Every flower must be made the most of. Let each pot be slightly pitched forward, and

let every defective leaf and bloom be picked off, and the names plainly written. All is now ready for the First Prize. As soon as the show closes, let them be carefully papered up again, and they will be little or none the worse for being shown to the public.

To get the First Prize, the plants should have abundance of large blooms distributed regularly all over the plant. The blooms must be of a perfect shape, and the sorts distinct in color. The foliage must be perfectly green, and free from dirt and insects. The plants must have health and vigor, so that they can throw out branches to give them a graceful and elegant appearance, and should be as near the shape of a good specimen of *Cedrus Deodara* as possible, with only one stake in the centre. Every plant should be of the same shape, and about the same size, so that they may have the appearance of having come out of one mould. The plants must be perfectly round, so that one side is as good as another. Let the blooms hang about four inches from the floor all round the plant, in which way the pot will be half-hidden by the plant. Plants in a 12-inch pot, when well grown, ought to be five to six feet high, and four to five feet through.

In the early part of the spring, fuchsias are very much injured by what is commonly known by the name of the "spittle fly," and they must be well looked after. The only means that I know to get rid of them is to catch them and kill them, for tobacco smoke has not the slightest effect on them. Green fly and thrips are easily got rid of in the ordinary way of fumigation with pure tobacco. I have tried many things recommended, but none answer so well as this. Two applications, one in each week, will remove them for a long time if properly done.

The soil that I use is one part yellow decayed loam, one part leaf-mould, one part peat or heather soil, and one part well-decayed cow dung, with almost another of sharp silver sand, well mixed together two months before using.—(*Gard. Chron.*)

ROCKWORK.—Broken wine-bottles, glass, and pottery, either separate or mixed, thrown on the top of the fire (when made up for the night) of a conical or tubular boiler, combine with the clinkers and produce very nice-looking results for ferneries and similar purposes, particularly the wine bottles, which resemble the color of *Majolica China*. Having exhausted my own heap of broken bottles, I resorted to a heap thrown on some waste ground, and was surprised at the great substance of glass of many of the bottles, quite accounting for the reason why those of some dealers hold so little, though the exterior is as large as usual. This discovery of thick bottles might be useful to me, and probably also to your readers.—(*Gard. Chron.*)

CYTISUS RACEMOSUS.—What a glorious object this old-fashioned greenhouse shrub is where scope is allowed for it to develop its full beauty! I have a plant of it in bloom here, which is indeed gorgeous, forming a striking contrast with the lilliputians one meets with in 48-sized pots in Covent Garden. The plant to which I refer stands in a border in our

conservatory; it measures 20 feet in height, and 12 feet in diameter, and is literally loaded from bottom to top with graceful racemes of yellow bloom. It receives only ordinary treatment. After it has finished flowering it is pruned in somewhat closely. Should the summer prove very hot, it is of importance that it should receive a few good syringings, as it is subject to attacks of red spider, and it should also have copious waterings.—(*Gard. Chron.*)

PRUNING FRUIT TREES.—Mr. Grin of Chartres, proposes instead of pruning fruit trees in any of the ordinary methods, to pinch off the tops of the young leaves or of the growing buds just after their expansion, leaving intact, however, the first leaf that is produced. By this simple proceeding, says Mr. Grin, the sap is arrested, undue growth checked, the shape of the tree preserved, and the production of fruit encouraged. The removal of the tips of the young leaves is effected in April, and is followed by the development of flower-buds at the base of the buds. We ought to have said that Mr. Grin, as a preliminary step, prunes in November, so as to secure in the buds that are allowed to remain all the sap elaborated in the winter. We should like to hear the opinion of some of our practical friends upon this process, which is simple enough, if effectual.—(*Gard. Chron.*)

FARFUGIUM GRANDE.—I am surprised that this beautifully blotched Coltsfoot is not used more than it is for bedding purposes; it withstands all weathers, and although not perhaps quite so hardy, a very little protection is all it requires. When a tolerably good sized plant is obtained it can be readily divided into dozens, a single crown to each division being sufficient. I have propagated it extensively this spring, and purpose bedding it out along with some other plants that will furnish a suitable contrast in the way of color. As regards the result I may have something to say hereafter.—(*Gard. Chron.*)

Horticultural Operations

FOR JUNE.

FRUIT DEPARTMENT.

MAY has been a rather cool month, with two frosty mornings, which did some damage to grapes and other plants; the latter part has been rainy, and fine growing weather.

GRAPE VINES, in the grapery, will be swelling their fruit, and thinning should be done at once, if not already attended to. See that the vines are properly disbudded, and the laterals stopped. Damp down the house, morning, noon and night, on warm, dry days, and give air freely in good weather, being careful to avoid cold draughts. Vines, in the cold grapery, will be setting their fruit, and will soon require the same care of the

early grapery, such as disbudding, stopping, &c. Discontinue syringing until the berries are well set. If the border should be dry give a good soaking with weak liquid manure. Vines, in the open air, should receive attention now, disbudding or rubbing off all the superfluous shoots, leaving only such as are wanted to make strong bearing wood for next year. Tie the fresh shoots firmly to the trellis, as high winds are likely to break them off. Manure and dig the ground, if not already done.

STRAWBERRY BEDS should have the last weeding at once, and the plants should be carefully strawed, to prevent the fruit from being injured by heavy rains. New beds, recently planted, should be frequently hoed and kept free from weeds. If dry weather should set in, while the beds are in full bearing, they should have a thorough watering.

ORCHARD-HOUSE TREES will now be swelling their fruit, and as the weather is fine the trees may be removed to the open air. Give them a top-dressing of rotten manure, and water liberally till the fruit begins to color. Continue to pinch in and regulate the young shoots, so as to secure an abundance of good bearing wood for another year.

SUMMER PRUNING should be commenced now. Pinch in the lateral shoots to two good eyes, and cut away superfluous wood.

GRAFTED TREES should be looked after. See that the ties are not cutting the branches, and stop weak shoots, to prevent the wind from breaking them off.

INSECTS should be looked after. Red spider and green fly, if troublesome, are easily destroyed by a good syringing with whale oil soap.

FLOWER DEPARTMENT.

The conservatory should now be gay with pelargoniums, fuchsias, and other showy plants, removing such as have done blooming, and replacing them by others just coming into flower. Camellias, azaleas, and many other plants, should be moved out of doors the last of the month. This will give room for achimenes, gloxinias, Japan lilies, and other summer blooming plants. Continue to give attention to winter flowering stock, heading in and repotting such as require it, and planting out, or plunging the pots in the open ground. Improve leisure time to collect and prepare soils for winter use.

CAMELLIAS, now making their growth, should be kept well syringed, and have occasional waterings with liquid manure.

PELARGONIUMS will now be in their prime. Keep the house cool, and shade in the middle of the day from the hot sun.

AZALEAS will now require attention. Repot such as need it, and stop vigorous shoots, in order to make bushy specimens. Regulate and tie in the branches, if handsome specimens are wanted. See that the plants are not infested with black thrip, which should be immediately destroyed by syringing with whale oil soap.

CHRYSANTHEMUMS should have attention; repotting young plants, or planting them out in the open ground, in good rich soil. Stop the leading shoots, in order to make stocky plants.

FUCHSIAS will require another shift into their flowering pots. Stop the young shoots. Syringe often, and use liquid manure, to obtain a vigorous growth.

CALADIUMS will require to be shifted into larger pots, using a richer soil, and watering more liberally. Shade from the very hot sun.

TUBEROSES should be repotted, and plunged in the open ground.

HEATHS should be planted out in the open ground, or, if kept in pots, they should be plunged in a cool frame.

ROSES. Plant these out in the open ground, in good rich soil, or repot and plunge in the open ground.

BEGONIAS should be shifted into larger pots, using a light rich soil. Keep the foliage dry, but water liberally at the root.

CHINESE PRIMROSES should be removed to a cold frame, and be shaded from the mid-day sun. Sow seeds for winter stock.

CINERARIAS, done blooming, should be top-dressed and placed in a frame, in order to obtain strong young plants.

FERNS should be kept in a shady moist house, and freely syringed, but not too wet.

POINSETTIAS should be headed in and repotted.

WINTER FLOWERING PLANTS should be headed in and repotted.

GARDENIAS may be planted out in good rich soil.

NEAPOLITAN VIOLETS, for winter flowering, should be divided and planted out in good rich soil.

CALLAS should be dried off for one or two months.

CYCLAMENS may be planted out in a frame, using light rich soil.

SPECIMEN PLANTS, of all kinds, should have attention: repotting, tying in, so as to produce symmetrical and beautiful plants.

FLOWER GARDEN AND SHRUBBERY.

The recent rains have given vigor to vegetation, and the lawn will require rolling and cutting immediately, continuing it every two weeks. Rake, clean and roll the walks, and keep everything neat and in good order. Rake the surface of newly planted beds, and tie up all plants which require it.

BEDDING PLANTS, if not already put out, should be got into ground as speedily as possible.

GLADIOLUS should be planted.

TRITOMAS AND ERYTHRINAS should be planted in good rich soil.

ROSES should have attention. See that the bushes are clear of the rose slug in good season, and syringe with whale oil soap, if necessary.

TULIPS AND HYACINTHS should be taken up the last of the month. Fill the beds with asters, annuals, or bedding plants.

DAHLIAS should be planted immediately. Use plenty of good manure.

PEONIES should be tied up to neat stakes, to prevent the flowers from being injured by the rain.

ORNAMENTAL FOLIAGED PLANTS. Fill vacant places with fine specimens of the different foliaged plants.

HORTICULTURAL BOTANY.

THE great International Horticultural Exhibition, for which preparations were commenced early last year, was held in London, in the Royal Horticultural Society's Garden, commencing Tuesday, the 22d of May, and continued nine days, to the 1st of April. It was every way a great success, both as regards the plants displayed, and the financial results of the Exhibition. From 10,000 to 25,000 persons visited the Exhibition each day at 2s. 6d. admission, the first week, and 1s. the second. And this was not all the good results of the show. It brought together the Belgian, Russian, Parisian, Italian and English cultivators and botanists of eminence, who held a kind of botanical congress, at which many valuable papers were read by the contributors. Among the botanists present, who took an active part, were Prof. De Candolle, Geneva; Herman Wendland, Herrenhausen; Dr. Hildebrand, Bonn; Prof. Goeppeel, Breslau; Prof. Palatore, Florence; Prof. Reichenbach, Hamburg; Prof. Lecoq, Clermont Ferrand, Prof. Karl Koch, Berlin; and Dr. Dickson, Edinburgh. Among horticulturists, M. André, Paris; M. Baumann, Ghent; Shirley Hibbard, London; T. Rivers, Sawbridgeworth; James Anderson, Glasgow; M. Krelaage, Harlem; M. Van Hule, Ghent; and M. Bossin, Paris. Mr. Anderson read a paper on the importance of using water at least as warm or warmer than the air for plants; M. Van Hule, on a rational mode of pruning; Mr. Rivers on orchard-houses. These, with all the papers, will probably be published in the Gardeners' Chronicle, as some of them already are, and we shall give abstracts from them in our pages. We give, in the present number, Mr. Anderson's paper on the temperature of water for plants.

At the conclusion of the show the occasion was made more social by a grand banquet at Guildhall, at which the Lord Mayor of London presided. Toasts were drunk and speeches made, and in the evening the Grenadier Guards played a

choice selection of music. Another dinner was given at St. Martin's Hall, at which 500 gentlemen sat down, Lord Lennox, M. P., presiding.

The Botanical Congress was held on the 23d, Prof. De Candolle in the chair. A very large number assembled to hear the President's address, which was delivered in French. As this address is highly interesting we present the larger portion of it to our readers:—

In order to derive the full advantage from a meeting of so many lovers of science, horticulturists and botanists, brought together from all parts of Europe, it is necessary that the common object for which they have met should be perfectly understood.

It devolves on me, who am called upon to preside (an honor of which I feel myself unworthy), to point out the bond which unites us, and of which perhaps you have at present but a vague, and, so to speak, an intuitive perception.

In my opinion, we are not here merely as amateurs to satisfy our curiosity. The proof of which is, we are here assembled to listen to discussions, instead of wandering about the fairy-like garden of the Exhibition. Evidently we seek something more than a mere flower show, and that something is, in my opinion, instruction. It is not sufficient for horticulturists merely to see—they must also study and reflect; neither is it sufficient for botanists to observe details minutely; they must also see the plants on a large scale and in grouped masses. The connection of practice with theory, and of art with science, is acknowledged to be indispensable; and in accordance with this prevalent opinion we here affirm, by our presence in this room, the necessary union of botany and horticulture. The aim of my brief observations will be to call to mind how they aid each other, and to show how much more they might do so. If I am not mistaken, it will follow from the facts to which I shall allude, that our united efforts, scientific or practical, modest though they appear, contribute to increase the well-being of man, in all conditions and in all countries.

1. THE ADVANTAGES OF HORTICULTURE TO BOTANY.

Let us first mention the services that horticulture renders, or may render to botany. Without being myself a horticulturist, I affirm or recognize them willingly, the advancement of science rendering it necessary to have recourse to all its collateral branches.

We no longer live in those times of illusion, when botanists merely occupied themselves with European plants, or with a few from the East, and, from a spirit of caution rather than from ignorance, pictured to themselves all distant countries as possessing much the same general vegetation, with a few uncommon or exceptional species. A century of discovery has made known the extreme variety in the floras, the restricted limits of many species, and the complicated entanglement of their geographical distribution. To see all the different forms of vegetation of the world, would be to realize in a degree the history of the Wandering Jew; besides, with this constant travelling, where would be the opportunities for that reflection or study which create true science?

The traveller is too much exhausted in warm countries, too distracted in those temperate regions favorable to active life, and his faculties are too much benumbed in the colder regions, to enable him to devote himself to minute researches with the lens or the microscope, or even to sketch or properly describe that which he has gathered. He sees, in passing, a crowd of things, but he can scarcely ever stop to enter into details, especially of those that present themselves in rapid succession. Rarely can he see the fruit and flower of a species at the same time, and it is quite impossible for him to study their complete development during the whole year. The notes taken by the most intelligent naturalist are so affected by these fatal circumstances, that it is seldom they add anything to that which a dried specimen can teach the sedentary botanist.

It is horticulture, then, which brings before us a multitude of exotic plants in a condition best adapted for study. Thanks to the variety of species it accumulates and successfully cultivates, the botanist can investigate the most difficult questions, and pursue his researches in families whose genera

are not indigenous in Europe. In the herbarium, more minute observations can be made than is generally supposed; nevertheless, for certain researches, it is absolutely necessary to have the living plant, particularly for those relating to the relative disposition, the origin and development of the several organs, as well as for studying the curious phenomena of fertilization, the movements and direction of the stem, leaves, and parts of the flowers. Horticulture has done much to advance the progress of physiological botany, but it still has much to do. The most remarkable experiments of physiologists—viz., those of Hales, Duhamel, Knight—have been made in gardens. Also the long series of experiments of the younger Gaertner, and, more recently, of M. Naudin, on hybridization, which relate to the cardinal subject of the species. As much may be said of the numerous trials which are made, in horticultural establishments, to obtain new races or varieties. These have a great scientific importance, and it is undoubtedly the horticulturists who are the teachers of botanists on these subjects.

It is horticulture that has given us the longest series of illustrated journals that have ever been published; and here I must do justice especially to the English horticulturists. No doubt the science of our time requires a larger amount of analytical details than is contained in the plates of the "Botanical Magazine," "Botanical Register," "Andrews' Repository," "Loddiges' Botanical Cabinet," "Sweet's British Flower Garden," "Paxton's Magazine and Flower Garden," and other English journals; but what a number of forms are thus fixed by the engravings in these books, and what a fund of valuable documents for consultation they afford. One must admire the "Botanical Magazine," commenced in 1793, continued from month to month with an exemplary regularity, and which is now at its 5580th plate. Not only has it always represented rare and new species, but it has ever been conducted on a simple and uniform plan, which renders it convenient to consult.

The series of plates is unique from the very beginning. Each plate has its number, and each article of letter-press refers only to one plate, by which means the quotations from

the work are rendered brief and clear. Many editors have not understood the advantage of this simple arrangement. They have varied their titles, their series, their pagings; they have affixed to their plates numbers, then letters, then nothing at all; the end of which is (and this ought to serve as a warning for the future) that the more they have altered and complicated the form of their journals, the shorter time they have lasted.

How is it that these purely bibliographical details cause in us such sad recollections? Of the men just mentioned, who have rendered such eminent service to botany and horticulture, England has lost three during the year 1865—Sir Joseph Paxton, Dr. Lindley, and Sir William Jackson Hooker. I should certainly fail in what is expected of me if I did not express, in the name of the foreigners attending this meeting, our deep regret at such serious losses. We know them all by their writings, and many amongst us have known personally the distinguished men I have mentioned. Their names follow us at each step in this the scene of their labors. If we admire the boldness of construction of the iron domes that characterize modern buildings, we think of the Crystal Palace, of Chatsworth, and of the humble gardener who became a great architect. If we visit the beautiful establishment at Kew, we see everywhere around us proofs of the indefatigable activity of Sir William Hooker. Lastly, if we ask the origin of the garden of the Royal Horticultural Society at Kensington, we are told it is only a development of that at Chiswick, where Lindley stood preëminent by his knowledge and his energy; and of that Society where botanists of my age found in their youth such valuable encouragement in their studies.

The names of Sir William Hooker and of Dr. Lindley, thanks to their special works, will ever remain distinguished in science. These two botanists have, moreover, been directors of horticultural journals, and of great horticultural establishments, and since their influence has been so fully acknowledged by practical men, I shall have little trouble in showing that science is as useful to horticulturists as horticulture is to botanists—and this will form the second part of my discourse.

2. THE ADVANTAGE OF BOTANY TO HORTICULTURE.

The principles of vegetable physiology are what horticulturists and agriculturists usually study in books on botany. They do not always find direct answers to their questions; but they can draw from them certain rules, certain ways of experimentalizing and reasoning, which saves them from falling into many errors. Should some ridiculous idea be promulgated by some ignoramus or charlatan, it is by an appeal to the general rules of physiology that a practical man may at once reject them, or, at least, hold them in distrust. On the contrary, innovations, if in harmony with the principles, may be, and I will even say ought to be, readily accepted.

Do not let us put too much faith in the lucky results of experiments made absolutely by chance. It is with some of these experiments as with dreams and presentiments—if they come true once in a thousand times they are talked about, otherwise they are passed over and forgotten. Besides, it must be said, men nearly always are guided by theories; but the theories of the ignorant are often absurd and without foundation, whilst those of educated men are based on probabilities, or on an accumulation of facts.

Conjointly with physiology, botanical geography shows the distribution of plants all over the globe, their struggle with the elements, their migrations, and already raises a portion of the veil which covers the obscurity of their origin. All this ought to offer a real interest to horticulturists. We are beginning to have the power of expressing in figures the effect of each climate upon vegetation; consequently, the possibility of a given species enduring the mean or extreme climatal conditions of that country to which it is desired to introduce it. Already we can show, in the clearest manner, the analogy between the vegetation and climate of certain regions, widely separated the one from the other, and point out in which cases new attempts at cultivation should be tried or where they should be discouraged. A celebrated geologist was able to say, beforehand, there is gold in such a part of New Holland; and gold was found there. We can also say, the Olive tree and the Cork oak will succeed in Australia; the eastern and temperate region of the United States is

favorable to the growth of Chinese plants, more particular to that of Tea; and we can assert that that part of America included between San Francisco and the Oregon territory will, one day, supply wines as varied and as excellent as those European ones produced between Portugal and the Rhine.

It is a singular fact, that the two principal beverages of the civilized world, wine and tea, which produce similar stimulating effects, but which to a certain extent are the substitutes one for the other in different countries, present also in the mode of cultivating them the most marked resemblances and differences. The vine and the tea-plant succeed best on stony, barren hill-sides, of which they sometimes increase the value a hundred-fold. According to the exposure, the soil, the cultivation and manner of preparing the produce, wine and tea are obtained of unquestionable excellence; whilst the neighboring crops, but a short distance off, may be more or less ordinary in quality. The two shrubs require a temperate climate, but the vine needs heat and no rain during summer, whilst the tea-plant requires rain and but little summer heat; the result of which is, that these two species are almost geographically incompatible. Vine-growing countries will never produce tea, and *vice versâ*.

But you will say, these examples belong rather to agriculture, and concern neither botany nor gardens. I maintain the contrary. It is science, in the present day, which points out what plants to cultivate, and into what countries to introduce them. Horticulture makes the trial, with infinite pains. If successful, the young plants are submitted to the less refined treatment of agriculture. Before the happy introduction of Cinchonas into British and Dutch India could be effected, botanists were required to collect, distinguish, and carefully describe the various species of American Cinchonas; horticulturists were then called on to make cuttings, gather the seeds, raise the young plants, transport and establish them in another part of the world; and so at last they were passed over to the care of the agriculturists. The coffee-plant did not spread gradually from Arabia to India, from India to Java; nor was it the American colonists who brought

it from its original country to their fazendas or haciendas. The shrub was first described by botanists, and was afterwards introduced by the Dutch into a garden at Batavia; from thence it was taken to the Botanical Garden at Amsterdam, from whence a specimen was sent to the King of France in 1714. De Clieu, a naval officer, transplanted it from the garden at Paris to the French colonies in America. A multitude of such instances might be named. In the present day science has progressed, practical men avail themselves of it, governments and nations have abandoned those mistaken ideas in accordance with which it was supposed that a cultivation advantageous to one country was injurious to others. Hence we may hope to see, before long, useful species planted in all regions where they can thrive, to the great advantage of mankind in general.

One of the most evident effects of science has been to create in the horticultural public a taste for varied and rare forms. Formerly in gardens there were only to be found certain kinds of plants which dated back to the time of the Crusades, or even of the Romans. The discovery of the New World did not produce a change in proportion to its importance; perhaps because horticulturists did not travel enough, or acquaint themselves with those countries whose species were most suitable for cultivation in Europe. Botanists, fortunately, were more ambitious. Their collectors were numerous and daring. They enriched their herbaria with an infinitude of new forms, and published works upon exotic plants, such as those of Hernandez, Rumphius, Sloane, &c. The immense variety in the forms of plants was thenceforth recognized, and in point of taste the elegant simplicity of the primitive flowers was able to vie with the gaudiness of the double ones. Then ceased the reign of tulips and peonies in flower gardens. Curiosity, that great incentive to all science, having penetrated horticulture, the change in gardens became rapid. Instead of a few hundred species such as were cultivated at the commencement of the last century, there are now 20,000 or 30,000 to be found in most of the present catalogues. The single family of orchids has probably more different representatives in our hothouses than was the case

with all the families of plants put together, a hundred years ago. Fashion, united to the present curiosity of amateurs, causes, from time to time, old plants to be abandoned for new ones; and thus the entire vegetable kingdom will ultimately pass under the observation of civilized man.

What would horticulturists do, amidst this invasion of thousands of species, had not botanists devised convenient plans of classification and nomenclature? The families, genera, and species, have all been arranged in books, just as the districts, streets, and numbers of the houses are in our great capitals—with this superiority of method, that the form of the objects indicates their place—as if, in looking at a house in a town, one might discover, at a glance, to what street and what quarter it belonged. The plan of giving a single name to each species, besides its generic name, together with the prohibition of changing names without due reason, of giving the same appellation to two different species, or two genera, far excels our plan of distinguishing individuals. How much it would simplify our intercourse with men, and facilitate our inquiries, if, in the whole world, the members of one family only bore the same name, and if each individual had but one christian name, differing from those of the other members of his family. Such is, nevertheless, the admirable plan of nomenclature that science has provided for horticulturists, and which they cannot too much appreciate and respect.

3. THE BENEFICIAL EFFECTS OF THE ASSOCIATION OF BOTANY WITH HORTICULTURE.

The pursuit of horticulture demands books and herbaria, as that of scientific botany requires cultivated living plants. Thence the necessity, which is more and more recognized, of bringing together the materials for comparison in the same town, the same establishment, and even under the same administration, organized so as to facilitate the use of them. How many institutions in Europe, either private or public, would be benefited by this arrangement! How many towns and countries are now deficient—some in libraries, some in herbaria, some in respect to horticulture. Professional men proffer their complaint; let us hope that public opinion may end by listening to them.

The bringing together the means of study, I have said, is desirable. Not less so is the interchange of ideas and impressions, both of botanists and horticulturists. Each of these classes must clearly have distinct characteristics; but the one should be influenced by the other. By these means, some too retiring dispositions may be brought out, and certain dormant powers developed. Horticulture, for instance, has a commercial tendency which may be carried too far. Charlatanism may slide in amongst flowers. Botany, on the contrary, is a science, and consequently rests on the investigation of pure and simple truth. A horticulturist who allows himself to be influenced by a scientific spirit, necessarily frees himself from overselfish tendencies. Natural history, on its side, by reason of the perfection of its method, its nomenclature and its minute observations, has something technical and dry about it, which contrasts with the grandeur of nature, and with the sentiment of art. It is for horticulture, combining, as it does, the planning and the decorations of gardens, to develop the æsthetic faculties of the *savant*, as of the world in general. A lovely flower, beautiful trees, a splendid floral exhibition, excite a sort of admiration, and even enthusiasm, similar to the effects produced by music or painting.

The powers of the German composers of modern days, and those of the Italian painters of the 16th century, are justly extolled; but may it not also be said, that in point of art they are equalled in their way by the beautiful parks of Old England? The feeling of harmony, in form and color—is it not also studied in them? The effect of contrast—is it not skilfully managed? The gradual transition from architectural to natural beauties—is it not treated in an admirable manner? Yes; decidedly the English landscape gardeners are poets; they have drawn from the same sources of inspiration as the most national writers of their country, and that source is the appreciation, so universal in England, of the beautiful, in an aspect of nature which is elegant and attractive, though somewhat grave.

Thus, gentlemen, for the development of our talents, as well as for our actual benefit, art and science keep

pace together. Let us rejoice over their union, rendered conspicuous to-day by this congress of botanists, held in connection with a great floral exhibition; and after these general observations—perhaps rather too protracted—let us enter upon the consideration of those more truly scientific subjects, in which many among you are no doubt disposed to take part.

In another number we shall give some of the details of the magnificent exhibition of plants, which the Lady Mayoress desired the Lord Mayor to say to the party assembled at Guildhall “was one of the most gratifying of her life.” No lover of plants can read the account without regretting that he should be so widely separated from a country so far advanced in the science and art of culture, and the opportunity of giving so much instruction and delight as the occasion offered.

TEMPERATURE OF WATER FOR PLANTS.

FROM THE GARDENERS' CHRONICLE.

THE following highly interesting and valuable paper by Mr. James Anderson, on the Temperature of Water, and its Effects upon Plant Cultivation, was read before the Horticultural and Botanical Congress, of which a notice will be found in a preceding page.

Nothing is less understood, or of more real importance than a true knowledge of the art of watering plants,—and next to watering, of the importance of the temperature of the water with which plants are watered. Probably more plants are killed by injudicious watering with cold water than by any other means, and we know of nothing upon which real practical information is more needed than this; not that watering can be learned by reading—for it can only be mastered by study and observation—but because it shows there is something more required than the mere routine of the watering pot, by which every plant is soaked, whether needed or not,

or whether cold or warm. We commend its perusal to the attention of every cultivator:—

Cultivators in general are not over zealous in taking cognizance of the relative temperature that exists between water and air in any given house, and yet upon such, in a great measure, depends the exuberance of the plants. Many scarcely recognize the importance of making adequate provision for water heated, at least, to the same temperature as the atmosphere. It is not sufficient to have cisterns dug out under the ground floor, and made water-tight by the various methods in practice, to produce a temperature sufficiently high. Unless the hot-water pipes actually run through or under them, I have found by repeated experiments, especially in tropical houses, that a difference ranging from 5° to 10° , Fahrenheit's scale, exists between the temperature of the air and that of the water. I can scarcely perceive anything more prejudicial in the whole routine of plant culture, having a tendency to chill and paralyze root-action, than frequent waterings of such a dissimilar temperature. It is bad enough under any circumstances, but when we come to practise upon valuable tropical orchids, the injury becomes, after a time, irreparable.

Why should this be so? Is it owing to the conservative tendencies of an initiatory practice? Numbers, certainly, do seem disinclined to move out of the groove into which they settled down in the early days of their practice, while others have been bold enough to strike out of the beaten course, and oftentimes, too, not without success. Curiously enough, it has long been a custom to furnish bottom-heat for pines, and even melons and cucumbers, arranging the beds in such a way as to be from 5° to 10° higher than that of the surface, and good results have invariably followed. Tepid water has always been in request by our foremost pine growers, and formed one of the recommendations in every calendar of operations. Indeed, were any one to question the merits of the system as a whole, a hundred voices at least would be lifted up against him. Innovations make slow progress; for it is only a modern practice looking into the geothermal state of vine

borders, and furnishing either by chambers or aerated passages an auxiliary means of preserving and dispensing heat to the roots. No one, unless he be a bigot, will venture to challenge or gainsay the good to be derived by the adoption of such a system. Any little dispute that has arisen as to the efficacy of heated vine borders is traceable to individuals resident in localities having subsoils such as sand or chalk, which have greater power of retaining heat and parting with superfluous moisture than other subsoils, and therefore have less need of artificial appliances. And how, I would ask, is it that the practice is not universally carried out? why is it not followed to a legitimate issue? If we have unmistakable proof of an improved cultivation in every advance made in accordance with a system, we may be certain that it is an innovation of the right stamp, worthy of imitation and adoption.

So far as the practical gardener is concerned, there are no plants under cultivation that merit a more undivided attention, whether we look to their variety, the geographical range over which they extend, or above and beyond all, their monetary value, than the orchidaceæ. Every little scrap of information, from reliable sources, is gathered up and noted down with an avidity only known to orchidophilists and orchidculturists. The physiological structure of the plants is so peculiar, so different to that of every other form of vegetation, as to render them pointedly interesting to every naturalist. That they are capable of resisting far more fatigue than any other plants is well known, and yet it requires the highest degree of cultural skill to maintain a collection generally in a healthy state. They are also liable to diseases quite foreign to other plants, and, in this respect, approach a step closer to the animal kingdom.

In the course of experience and experiment over a large and varied collection, I have found tangible benefits to accrue from studying the thermal condition of the compost in which the plants grow.

I may state that it is no haphazard conjecture that I am about to propound, but a simple statement of facts evolved during a ten years' practice upon an orchidaceous collection.

In the former period, although I managed to grow the temperate species quite satisfactorily enough, I could not manage the great subdivision of Vandææ at all well. I found, especially in the case of *Saccolabiums*, *Phalænopsids*, and some of the more tender *Aerides*, the most discomfiting opposition. The fine fleshy roots which had been emitted during the growing season, and which had been introduced into the pots, pans, or baskets, as the case might be, at the season of repotting, were on the next examination a mass of rottenness; in many instances very few of the roots under ground escaped unscathed. What was the consequence? The lower leaves become yellow, dropped off one by one, and left me and the plant at the end of the season in pretty much the same condition as at the beginning. This was mortifying enough, especially as the compost was physically and chemically good enough, as I have ultimately proved. Wherein, then, lay the defect? It was in the watering of the plants with water taken from an underground cistern, which a series of thermometrical experiments have shown me, was cooler by 7° to 10° than the atmosphere. "Necessity is the mother of invention," and when I began to reflect upon the advantages of bottom-heat to pines, vines, and stove plants, I set about to effect a reformation. I shrugged my shoulders and shook my head at the very idea of a tan or sand-bed in an orchid house, as being a resort for an army of cockroaches (*Blatta orientalis*) that could never be successfully overcome, and that would be a plague among the plants scarcely less devastating than the locusts of old. I resolved that the water should be increased in temperature, and with that view ordered hot water to be drawn from the boilers and mixed with the colder water drawn from the cistern until it was never less than 10° —it might be sometimes so high as 20° —warmer than the atmosphere of the house about to be watered. The effect, in a few months, quite exceeded my most sanguine anticipations. The vigor of the plants increased, the quality and quantity of the bloom was greatly superior, and when the season of repotting came round, the roots embedded in the compost, instead of being all but universally putrid, were generally healthy. I have now, for upwards of two years,

carried out the above plan in integrity, not only in tropical but in "cool" orchid-houses, with marked success. The impregnation of iron in the water drawn from the boilers, instead of being attended with any depreciating influence as some would have us to take upon credit, on the contrary appears to be productive of good.

Every gardener is a meteorologist, almost by compulsion; and yet there are probably not half a dozen cultivators in England that ever took the trouble to gauge the temperature of water about to be used either out of the water pot or the syringe. Men in charge, under the principal, although obedient, are not always reflective and pains-taking, and unless positive orders be given that water at such a temperature *must* be used, a good deal will be distributed at random.

In order that there may be no misunderstanding or doubt as to the theory I wish to inculcate and to be applied, allow me to reiterate that all pot plants as a rule ought to have water at the root at least 5° warmer than the atmosphere in which they live, and that tropical orchids will prosper all the better with a minimum variation of 10° ; that is to say, if all other conditions of treatment are skilfully met, a corresponding degree of vigor will be maintained. Much the best system I have seen in practice, recognizing the value of bottom-heat, without plunging material, is that applied in one of Mr. Day's tropical houses at Tottenham. Along the centre of the house, instead of so many tiers of 4-inch piping, there is a trough-like cistern, narrow at bottom and widening out towards top, somewhat in the form of a feeding-box for horses on a large scale. This is connected with the boiler by pipes in the usual way, and circulation is constantly taking place. The top is so arranged as to be opened or shut at pleasure, and by this means an excellent steady heat, either moist or dry, is dispersed over the roots of such plants as are immediately over its surface. I need scarcely say that Mr. Day's *Saccoladiums*, *Aerides*, and such like plants, in a medium of this kind, under Mr. Stone's cultural care, are indicative of high health and vigor. Mr. Williams, the well-known "Benjamin" of Mr. Warner's establishment at Hoddesdon, once the cherished home of rarities, now trans-

ferred to "Paradise," pricked his ears and was all attention while I was divulging quietly my "watering" practice. He appeared to be agreeably surprised, and intimated to me that he never grew orchids before or since equal to those under his charge at Hoddesdon, and his water tanks were in connection with the hot-water pipes. This surely goes a certain way to prove the soundness of the theory, on the "lateral extension" principle.

Lastly, we all know and fear the ravages of spot; we look with the greatest concern upon the insidious way in which it works itself over a collection of orchideæ, and oftentimes disfigures for life the appearance of many valuable plants. I unhesitatingly pronounce that there seems to be no absolute cure for some of the more aggravated forms of it; but beyond question skilful treatment will in a great measure prevent it. There are a variety of conditions that must be observed before any cultivator can command success; but in all my experience I have never been able to count upon it with the same certainty—I have never been able to claim immunity from the inroads of spot in the same satisfactory manner, until after I had reduced the "watering" theory to every-day practice.

P O M O L O G I C A L G O S S I P .

AGRICULTURIST STRAWBERRY.—Just as our number goes to press we have this strawberry ripe, and specimens have been exhibited before the Massachusetts Horticultural Society in fine perfection. Shall we say few of our cultivators are disappointed? Probably not; for they very strongly doubted its being the "Largest and best strawberry in the United States," as claimed by those who distributed it gratis, but received an equivalent of 30 to \$40,000, and this has proved true. It is simply a good sized, rough looking, and fair flavored berry—all and even quite as much as was expected of it, and probably of no real value, compared with La Constante and Hovey's Seedling. The vines have not wintered well generally, and it is exceedingly variable, according to

cultivation. We shall allude to it again after we have seen more of it.

THE NYCE FRUIT-HOUSE.—A company has been organized in Boston, with a capital of \$100,000, for preserving fruit under the Patent of Professor Nyce, and the success of the experiment will soon be made known in our vicinity. As a proof of the perfectness of the patent we received, on the 10th of May, ten Glout Morceau pears, in perfect condition; these were from the house in Detroit, Mich. After being brought so long a distance, they were kept from three or four weeks in a sound condition, and the last specimen, tasted June 4th, was as fresh as when taken from the tree. This, in our opinion, has fully settled all doubts about the question of keeping pears, as well as other fruits, by Prof. Nyce's plan. If the Glout Morceau can be kept three months beyond its season, the Bartlett and Seckel may be kept just as well from October to March. Apples, brought from Cleveland, by Dr. George B. Loring in April, are quite sound and fresh at the present moment, (June 20.) The erection of the house will be proceeded with at once, and finished in time to get in the early fall pears, and other fruits. The company will offer individual rights for sale at once, so that gentlemen who wish to erect a house can do so the present season. The Treasurer, Jesse A. Locke, Congress Street, Boston, will dispose of these rights, the price of which will be about \$200 or \$300 each for a house of sufficient capacity to hold 100 bushels.

LA CONSTANTE STRAWBERRY.—We think some of our cultivators, in alluding to this fine berry, a year or two ago, said it "went up like a rocket and came down like a stick." Perhaps this was a hasty remark, and made without due consideration; but no fruit should be judged without observation enough to sustain such judgment, whether it may prove right or wrong. We think, however, that this variety fully sustains the character we gave it when first received from M. De Jonghe, six or eight years ago, and quite justifies all that he said in its favor, as may be seen by a reference to his communication in a previous volume, (XXVII., p. 114.) M. De Jonghe said that there were not four varieties which eclipsed, in all respects, La Constante; and this has proved

more than true, for, so far as our experience goes, it has few or no superiors. This rather unfavorable year it has been fine when many others have failed. We again commend it as far superior to any foreign strawberry yet introduced; always reliable, and always beautiful.

FLORICULTURAL NOTICES.

894. *CYMBIDIUM HOOKERIANUM* *Rchb.* DR. HOOKER'S CYMBIDIUM. (Orchidaceæ.) Himalaya.

A greenhouse orchid. *Bot. Mag.*, 1836, pl. 5574.

This is one of the Sikkim Himalaya Orchids, which flowered some years ago, when first introduced, but from having been grown in too warm a temperature it has not flowered a second time till now. It is a vigorous grower, and has very beautiful white flowers, spotted with crimson. (*Bot. Mag.*, May.)

895. *THIBAUDIA CORONARIA* *Linden.* SMALL-LEAVED THIBAUDIA. (Vaccineæ.) New Grenada.

A greenhouse plant; growing a foot high; with light scarlet flowers; appearing in spring; increased by cuttings; grown in light peaty soil. *Bot. Mag.*, 1866, pl. 5575.

This is one of the beautiful class of plants, of heath like appearance in the style of flowering, but with myrtle-like foliage, always bright green, "rarely, if ever, infested with insects, always beautiful, and the flowers, which are produced in profusion, remain in beauty longer than those of any other ornamental plants of the same nature." The flowers are bell-shaped, scarlet, and hang in graceful clusters from the axils of the leaves. (*Bot. Mag.*, May.)

896. *MICROCACHRYS TETRAGONA* *Hook.* STRAWBERRY-FRUITED CYPRESS. (Coniferæ.) Tasmania.

A branching shrub; growing six feet high; with scarlet cones; appearing in summer; grown in good garden soil. *Bot. Mag.*, 1866, pl. 5576.

This is called one of the most remarkable of conifers, having a cypress foliage, and presenting the unique character of bearing a fleshy brilliantly colored cone. It forms a straggling shrub, and inhabits the tops of the mountains in

Tasmania. It is of course only half-hardy, but, like many of the conifers, it may be wintered in a cool greenhouse, and planted out in summer, and covered with its brilliant cones will form a new and peculiarly interesting feature among this tribe of plants. (*Bot. Mag.*, May.)

897. IRIS RETICULATA *Bieb.* NETTED IRIS. (Iridaceæ.)
Persia.

A greenhouse bulb; growing six inches high; with blue and purple spotted flowers; appearing in spring; increased by offsets; grown in light rich soil. *Bot. Mag.*, 1836, pl. 5577.

A very pretty species of the Iris, with small elegantly colored flowers, which are freely produced in a cool greenhouse in March. Its rich, deep violet lobes, and the delicious fragrance which it exhales, and its slender foliage, render it one of the most valuable plants. (*Bot. Mag.*, May.)

898. CEROPEGIA SORORIA *Harvey.* KAFFRARIAN CEROPEGIA.
(Asclepiadaceæ.) South Africa.

A climbing stove plant; with spotted flowers; appearing in spring; increased by cuttings; grown in light rich soil. *Bot. Mag.*, 1836, pl. 5578.

A curious and rather pretty species of the Ceropegia, of a climbing habit, with flowers of a greenish hue, singular barred transversely with black. (*Bot. Mag.*, May.)

899. HYOPHORBE VERSCHAFFELTII *H. Wendl.* M. VERSCHAFFELT'S HYOPHORBE. (Palmaceæ.) Isle of France.

A magnificent palm. *Ill. Horticole*, 1866, pl. 462.

This is one of the most splendid palms, attaining a large size, with beautiful fronds from 6 to 9 feet long, and gracefully recurved, requiring only the warm greenhouse in winter. (*Ill. Hort.*, Jan.)

900. HYOPHORBE AMARICAULIS *Mart.* LIGHT-STEMMED HYOPHORBE. (Palmaceæ.) Isle of France.

A superb palm. *Ill. Hort.*, 1866, pl. 463.

This is another noble palm, known under the name of *Areca speciosa*, not so large as *H. Verschaffeltii*, but no less attractive. It will flourish in the ordinary greenhouse temperature. (*Ill. Hort.*, Jan.)

901. CAMELLIA ROMA RISORTA. (Garden Hybrid.)

A greenhouse plant. *Ill. Hort.*, 1866, pl. 464.

A quite new and very beautiful camellia, raised from seeds by M. Del Grande of Florence. The flowers are of the first size, and have the exact form of the Rose Centfeuilles, of a bright rose color, splashed, striped and lined with deep crimson. Each petal is slightly bordered with white. It is one of the finest acquisitions. (*Ill. Hort.*, Jan.)

902. MARANTA SPLENDIDA *Versch.* SPLENDID MARANTA.
(Marantaceæ.) Para.

A stove plant; growing two feet high; with variegated foliage; increased by division; grown in rich soil. *Ill. Hort.*, 1866, pl. 467.

A splendid species of Maranta or Calathea, from the borders of the Amazon, where it was found by M. Baraquin. The growth is vigorous, the leaves are elevated on good foot-stalks, and they are of the most brilliant green, striped with pale green, and of a purplish hue beneath. It is a superb plant. (*Ill. Hort.*, Feb.)

903. BIGNONIA ARGYRO-VIOLACEA *Hort.* STRIPED-LEAVED
(SILVER, ROSE AND VIOLET) BIGNONIA. (Bignoniaceæ.)
New Grenada.

A hothouse plant; growing six feet high; with variegated leaves; increased by cuttings. *Ill. Hort.*, 1866, pl. 469.

Another rich acquisition from South America, which rivals all others for the number, the beauty and the industrial and medicinal value of its ornamental plants. The young leaves are rich purple, with green nerves; and as they become older the purple changes to green, and the nerves are lined with white, presenting a variety of tints on the same plant. Like the other bignonias it is a climbing plant, and will be a charming companion to the Cissus. (*Ill. Hort.*, Feb.)

904. DIEFFENBACHIA GRANDIS *Versch.* GIGANTEA DIEFFEN-
BACHIA. (Araceæ.) Para.

A stove plant; growing three feet high; with variegated leaves; increased by cuttings; grown in light rich soil. *Ill. Hort.*, 1866, pl. 470.

A gigantic species of the well-known Dieffenbachia, attaining the dimension of 6 or more feet, with immense leaves,

20 to 30 inches long, both stem and leaves elegantly covered with large white spots. It was found by M. Baraquin on the borders of the Amazon, and is one of the finest acquisitions. (*Ill. Hort.*, March.)

905. CAMELLIA CLODIA. Garden Hybrid.

A greenhouse shrub. *Ill. Hort.*, 1856, pl. 473.

An Italian seedling of great beauty. The flowers are of the first size, of a bright rose, with occasional stripes of white, and prettily veined through the petals, which are numerous, slightly lobed, but imbricated to the centre. The foliage is good, and it flowers freely. It appears to be a fine acquisition. (*Ill. Hort.*, March.)

906. ROSE, MARECHAL NIEL. (Rosaceæ.) French Hybrid.

A Tea rose. *Ill. Hort.*, 1856, pl. 477.

Marechal Niel rose is the latest and most magnificent of all the yellow Tea roses. It was produced by M. Pradel of Montauban, France, and was first introduced last year. It is vigorous in habit, well branched; the leaves are of good size, and the flowers, which are of very large size, and quite full, double, are of a beautiful yellow. It has attracted great attention at the late London exhibitions, and is pronounced the finest, in all respects, of the yellow Tea roses. (*Ill. Hort.*, April.)

SANVITALIA PROCUMBENS PLENO.

BY THE EDITOR.

SANVITALIA procumbens is an old plant, introduced to England more than fifty years ago, and has been extensively planted in flower gardens, on account of its dwarf habit, and showy yellow flowers, harmonizing better with plants of similar growth than any other of the same color. In geometrical flower gardens it has been the prevailing yellow, and has held its position as one of the best.

Yet in all this period it has been the same single flowering

plant, somewhat resembling the coreopsis, with yellow florets and a brownish disk, somewhat weedy in appearance, but still preferable to others of the same color. At last we have, as with the zinnia and other flowers, by the care of the German cultivators, obtained a variety with double blossoms, full, round and beautiful, not perhaps in the perfection we shall yet possess it, but so much superior to the parent that it will entirely displace it, and claim a prominent place in every garden.



10. SANVITALIA PROCUMBENS PLENO.

Sanvitalia procumbens pleno (FIG. 10) is a dwarf, diffuse growing plant, with golden yellow flowers, produced in great profusion, about the size, and with much of the aspect of a *Pomponé chrysanthemum*. These cover the plant, producing a uniform surface of bright golden yellow, and so double from the crown as to give the appearance of being prominently arched from the centre. Its continuous bloom, from June until October, still further enhances its value, and it will be found invaluable for decoration of flower gardens, particularly when dwarf masses of color are required. It is adapted to all soils, and to sunny aspects, and is just suited to our warm

climate; for ribbon lines, or belts, it is the most effective yellow flowered annual yet introduced. It grows freely from seeds, and only one out of thirty plants which we have raised from seeds the present year is single. Already they are in full bloom, and quite justify all the encomiums lavished upon it by the German cultivators.

L I L I U M A U R A T U M .

BY THE EDITOR.

THIS magnificent lily, though introduced two or three years ago, is yet rare, and comparatively unknown. The flowering bulbs have been mostly importations from Japan, for sufficient time has not elapsed to produce strong roots at home. For the few bulbs now found in the collections of cultivators, limited as the supply is, we are indebted to the explorations of Mr. Thomas Hogg, who collected them in Japan, and sent home the greater portion of those which have been distributed by the commercial dealers. But for him, their value would have been double their present rate.

July is the period of blooming of this glorious lily, (FIG. 11), and those who do not possess it, and are desirous of seeing how great an acquisition it is, may find it in the possession of many of the leading nurserymen. Our own plants, both in the open ground and in pots, are growing as freely, and looking as vigorous as the Japan Lilies (*L. lancifolium*) grown side by side in the same bed, and they appear to be just as hardy, and flower just as freely as that beautiful and now generally cultivated variety.

We need not, therefore, only call the attention of cultivators to the preëminently beautiful qualities of the *L. auratum*, and its perfect adaptability to common garden culture. Of its capability of high culture and increased splendor under such treatment, we have already given some account (Vol. XXXI., p. 362) in which one bulb was grown in a pot, attaining the height of six feet, producing two stems, bearing respectively 15 and 14 flowers, 29 in all. Twenty-nine flowers, 10 to 12 inches in diameter. How truly magnificent.

Undoubtedly this lily, as well as the *L. lancifolium*, may be grown to great perfection in pots, for our hot sun and heavy dews soon disfigure the noble blossoms. In a cool



11. LILIUM AURATUM.

house they maintain untarnished their delicacy of coloring and beautiful spotting, for a long period.

October is the period to obtain good spring bulbs, which

may then be planted in the open ground, precisely like the Japan lilies, and in the same soil, a good loam, enriched with leaf mould. Plant four to five inches deep, and on the approach of frost cover the beds with three or four inches of leaves or strawy manure, to keep the frost from penetrating too deep, and checking the early rooting of the bulbs. Those who have not had good success, we think, may attribute it to the neglect of a slight winter protection to the roots.

Such as are now growing in pots should not be dried off too suddenly after blooming, for this greatly weakens the roots. Give moderate supplies of water, gradually withholding it, but never entirely discontinuing it, up to the period of repotting.

In size, stateliness and real magnificence it is unexcelled among lilies. The bulb sends up a tall and slender stem, from three to six feet high, covered with from three to twenty large saucer shaped flowers of six petals, measuring full twelve inches in diameter, recurved at the ends, with a pure pearly white ground, with a distinct band of pale yellow through the centre of each petal, the whole surface thickly studded with brown or purple spots. It is also deliciously fragrant.

General Notices.

EUPHORBIA JACQUINIFLORA.—This beautiful plant is increased by cuttings taken off in April and May, and planted in light, rich, sandy soil, plunging the pots in a strong hotbed. I have two methods of culture for this plant. First, when low bushy plants are wanted, take strong cuttings of well-ripened wood, six inches long, and plant five in a small thumb-pot, having first placed a little moss at the bottom, filling up the pot with pure white sand, plunging in a good hotbed; in the course of two or three days I water copiously. When the plants have made shoots three or four inches long, select the two strongest shoots on each cutting, rubbing off all the others. As soon as the two shoots have become firm, I cut them back to three eyes each, which causes them to form beautiful bushy plants, taking care to nip off the ends of all straggling shoots till September, when the points are all taken off. The plants are repotted, as the roots appear through the bottom, in a very rich light soil, removing them to the back.

end of the stove, giving water in abundance; by this method bushy plants with drooping, slender branches are obtained. When the plants have done flowering, water is withheld for a week or ten days, when the plants are pruned back to two eyes on each original shoot, and placed in a cool greenhouse or shed. I find if the pruning is delayed that the eyes at the end of the shoots break first, which causes the long and straggling plants so often seen in collections, whereas if pruned immediately the plants are not exhausted. When it is wanted to excite the plants for the following winter, plunge them in bottom-heat and supply water; by this method flowers are produced from October to February.

Second method. Take the strongest cuttings that can be got, cut them in lengths each containing four eyes, plant them singly in thumb-pots in light rich soil, leaving two eyes above the soil; plunge in a good hotbed, supplying water. When the shoots have attained one inch in length, rub off the weakest; when twelve or fourteen inches long, remove to the greenhouse to harden. Care must be taken not to break the roots, which will be found, on removal, to have run through the bottom of the pot. Repot them in No. 24, using a good portion of ground bones in the compost; train them singly to sticks. They will not flower much the first season; in April following cut down to two eyes, select the strongest shoot, repotting, supplying plenty of water. Keep them in a warm greenhouse, and with proper management they will be about four feet long and three-quarters of an inch in circumference. These plants will flower from February to May, when the plants are cut down to one foot high and plunged in the stove; they will flower again from the end of August to November, and the plants are then thrown away. By this method the largest flowers are obtained, often in clusters of six or eight at the axis of each leaf from a foot above the pot.—(*Gard. Mag.*)

GROWTH OF PLANTS.—M. Duchartre, who has been investigating the rate of growth in plants by day and by night, considers that the greatest increase in length takes place at night. His measurements have been made on the vine, gladiolus, the strawberry, the hop, and other plants. He laid an account of his experiments before a recent meeting of the "Société Centrale d'Horticulture."—(*Gard. Chron.*)

IVY FOR UMBRELLAS.—The ivy does not generally figure as an item of Gardening Calendars; but it may be well to remind our readers that now is the best time to propagate it. The plants, struck from young shoots now, will have tremendous vigor if well managed. In *Rustic Adornments for Houses of Taste*, is a description of a mode of growing ivy to form umbrellas and canopies for use at fêtes and festivals. Now is the time to stake cuttings for this purpose, and take them up in clear sods to the required height at which they are to be stopped to form a head. These should be grown from the first in pots, and never be put in the open ground until discarded for the purpose for which they were originally grown.—(*Gard. Mag.*)

AMARYLLIS, LILIUM LANCIFOLIUM, &c.—Every kind of bulb grown in a pot should be repotted every year, and have a complete change of soil. There can be no better rule, generally, than to repot at the time when the bulbs, whatever they are, begin to grow naturally. Amaryllis may be potted at any time after they have had a few weeks rest, and if repotted in winter they must have bottom-heat to start them into growth; they may be easily subjected to any routine the cultivator may adopt, provided they are well ripened, and have some rest, being then quite dry, before being started again. We always repot Liliiums in autumn, and keep them in a cool pit all winter. They begin to grow in spring, and after the middle of April are put out of doors on a bed of cocoanut fibre for the remainder of the season.—(*Gard. Mag.*)

GROUND VINERIES.—Blessings on the man who invented them!—such to-day was my involuntary paraphrase of Sancho's immortal saying, when looking at my vines, so healthy and so productive, under these humble structures. It is not I fear so generally known as it ought to be, that to Dr. Samuel Newington, of Ticehurst, Sussex, we owe these most invaluable structures, so cheap, and yet so efficient. One of my vines—the Trentham Black—now occupies five 7-foot lengths (35 feet,) and has on every spur from one to three bunches, 110 in all: it bore last year a very large crop, but it seems never to exhaust itself. Another vine—the Black Hamburg—has run through three lengths, and shows about 70 bunches; another vine, General Della Marmora, occupies the same length, and shows about the same number. This large produce is certainly extraordinary when one looks at the simplicity of the whole affair. The glazed ridges, 30 inches wide at base, are on bricks, placed endwise, with four or five inches between each for ventilation, which is so complete that no syringing and really no care, except thinning the berries and stopping the shoots, is required. No red spider or mildew has ever visited my vines, and I think with much pleasure how capable these ground vineries are of giving to the owner or occupier of a very small garden a plentiful supply of well-ripened grapes of superior kinds. My vines alluded to are growing under the glass ridges first invented, 30 inches wide at base, and with bars, but it should be generally known that an improved method of making them is to have them three feet wide and without bars. Thus made they have a light agreeable look, and the vine, which should run along in the centre, has more room. These barless ground vineries are now made by Mr. J. Rivett, Builder, Stratford, Essex, at a very moderate cost, somewhere about 12s. each, painted and glazed. This at the present increased price of glass does not seem extravagant, particularly when it is considered that my Trentham Black vine, which will bring to perfection this season, when they are thinned, at least 75 bunches of grapes, is growing in a vinery 35 feet long, at a cost of 3*l.* There are many vineries of much higher pretensions, and that have been erected at twenty times the cost, that will not give equal produce. I ought to add that the soil in which the vines I have alluded to are growing had no particular preparation; it is a

calcareous sandy loam, and was dressed with manure to a thickness of three or four inches, which was well mixed in digging it to a depth of two feet; they have had no manure since, neither has the soil been stirred. Vines in some soils seem to flourish in compact unstirred borders, of which more anon.—(*Gard. Chron.*)

Societies.

CAMBRIDGE HORTICULTURAL.

This Society held a Strawberry and Floral Exhibition at the City Hall in Cambridge, on the 28th and 29th of June.

Liberal prizes were offered for strawberries, and some of the growers of Belmont, as well as Cambridge, competed for the prizes. The show of this fruit was one of the best ever made, comprising some of the best varieties, and remarkably fine specimens. J. O. Wellington of Belmont showed *La Constante*, *Triomphe de Gand* and *Hovey*; and W. R. Locke, *Hovey*, *La Constante*, *Wilson*, and *Brighton Pine*; Hovey & Co., *La Constante*, *Marguerite*, *Hovey*, *Lennig's White*, *Buffalo*, *French*, *Russell's Prolific*, *Bonte de St. Julian* and *La Sultanne*; Wm. P. Walker, *Triomphe de Gand* and *La Constante*; J. D. Hovey, *Agriculturist* and *Buffalo*; Davis & Bates, *Hovey* and *Boston Pine*. There were other smaller exhibitions. The *Agriculturist* were of good size, but dark, dingy in color, and soft in flesh. Prizes were awarded as follows:—

For the best collection of strawberries, not less than three varieties, of three quarts each, to J. O. Wellington, \$15.

For the second best, to Hovey & Co., \$10.

For the best basket of strawberries, not less than four quarts, to J. O. Wellington, for *La Constante*, \$25.

For the second best, to Hovey & Co., for *La Constante*, \$15.

For the best basket of *Hovey's Seedling*, not less than three quarts, to W. H. Locke, \$5.

For the second best, to Hovey & Co., \$3.

For the best basket of *Boston Pine*, not less than three quarts, to H. Davis, \$5.

For the best basket of *La Constante*, not less than three quarts, to W. P. Walker, \$5.

For the second best, to J. O. Wellington, \$3.

For the best pair of bouquets, to Hovey & Co., \$8.

For the second best, to J. E. Westgate, \$6.

For the best pair of hand bouquets, to Hovey & Co., \$6.

For the second best, to F. Becker, \$4.

For the best basket of flowers, to Miss Story, \$5.

For the second best, to Miss Kenrick, \$3.

In addition to the strawberries there was a fine show of plants and bouquets. Hovey & Co. sent a dozen superb pelargoniums, *Statice Halfordii*, the new var. *Sedum*, *Yucca filamentosa variegata*, palms, ferns, caladiums, &c. &c. Bouquets and cut flowers from various cultivators, all fine.

The Exhibition was every way a great success. The attendance was large. A band of music added to the attractions of the Hall, and the interest manifested was highly gratifying to the friends of the Society. Upwards of 100 members have been added to the Society since January, and it now promises to be a great auxiliary in the promotion of horticultural taste, and second only to the Massachusetts Horticultural Society.

Massachusetts Horticultural Society.

Saturday, April 7, 1866. The stated quarterly meeting of the Society was held to day,—the President in the chair.

The revised code of By-Laws was taken up for action, and various amendments having been proposed, it was voted that the same be printed, and the further consideration of the same be postponed until the next meeting.

The following members were elected: J. Fisher and A. P. Calder, Roxbury; John Kent, Charlestown; A. J. Hilboun, Chelsea; E. Kakus, Medford; H. G. Sanford, Gloucester; S. W. Tilton, Boston; H. E. Pierce and J. E. Swan, Dorchester.

Adjourned one month, to May 5.

May 5. An adjourned meeting of the Society was held to-day,—the President in the chair.

The By-Laws and Amendments proposed were taken up and 22 sections adopted. Upon the discussion of the 23d the meeting adjourned for one month, to June 2d.

OPENING SHOW.—The Opening Exhibition of the year took place on the 23d and 24th of May, in the lower Hall. Owing to the lateness of the season, the display was not quite so large as usual, but many very fine specimens were sent in. H. H. Hunnewell had some excellent pelargoniums, and Hovey & Co. eight magnificent azaleas, large and one mass of flower.

Among Mr. Hunnewell's plants was a specimen of the new and very beautiful *Clerodendron Thomsonæ*, distinct, and shown for the first time; it was deservedly awarded the prize. It was exceedingly well grown. The new and pretty foliaged plant *Iresene Herbstii*, or *Achyranthus Verschaffeltii*, was shown by Mr. Power. We close our report with the following from the Boston Transcript:—

Francis Parkman exhibited a plant of *Aquilegia Glandulosa*, which, with its intense blue and clear white flowers, was very attractive. James

McTear exhibited a bulb of *Ornithogalum Conicum* from Cape Good Hope, bearing a dense spike of white flowers. Joseph Breck and Hovey & Co., each made a fine display of late tulips. Jonathan French took the first prize of fifteen dollars, for collection of greenhouse plants; and Hovey & Co., the second, of twelve dollars. Mr. French was also awarded the first prize of eight dollars for Fancy pelargoniums. Mr. Black, gardener to Mr. French, received much credit for skill and neatness in cultivation. Messrs. Hovey & Co. took the first prize of ten dollars, for greenhouse azaleas. These were all magnificent plants, with a gorgeous profusion of bloom. W. C. Strong was awarded the first prize of four dollars, for *Zonale pelargoniums*.

For display of cut flowers, Hovey & Co. took the first prize of six dollars; J. E. Westgate the second, of five; J. McTear the third, of four; and W. C. Strong the fourth, of three dollars. For bouquets, J. E. Westgate took the first prize of three dollars each, for best pair of parlor and hand; Miss S. C. Westgate won the first prize of three dollars, and Miss H. G. Dunklee the second of two, for baskets.

The display of vegetables must necessarily be limited at this season, yet those shown were mainly excellent. James Nugent took the first prize of four dollars, for rhubarb; Samuel Sweetser the second of three, and George Dorr the third of two, for the same. John B. Moore was awarded the first prize of four dollars, for asparagus; and James Comley won the first and third prizes of four and two dollars, and Josiah Crosby the second of three, for cucumbers.

June 2. An adjourned meeting of the Society was held to-day,—the President in the chair.

A letter was read from Messrs. Tilton & Co., presenting to the Society three books published by them, and the thanks of the Society were voted for the same.

Capt. Austin, the Treasurer, sent in his resignation, and his communication was referred to C. O. Whitmore, J. F. C. Hyde, H. W. Fuller, J. S. Cabot, and H. H. Hunnewell, with orders to nominate his successor, to be chosen at the meeting in July.

Messrs. W. C. Strong, Wetherell, and B. Harrington, were appointed a committee to nominate a candidate to fill the vacancy on the Vegetable Committee, occasioned by the death of Abner Pierce.

It was voted that all members who were absent during the war in the service of their country, be allowed to retain their membership without the payment of the annual assessment, up to the present year.

The remaining Sections of the By-Laws were adopted, and the whole ordered to be printed for distribution.

The following members were elected: D. Needham, Groton; W. Dodge, F. Hunt, W. J. R. Evans, A. A. Cobb, J. A. Guild, A. W. Goddard, and T. O. H. P. Burnham, Boston; E. P. Tileston, Dorchester, Chas. Heath, J. R. Nichols, H. Barker, J. W. Candler, Geo. Bacon, and B. C. Vose; Timothy Gay, Chelsea.

Adjourned one month, to July 7.

Horticultural Operations

FOR JULY.

FRUIT DEPARTMENT.

JUNE, in the early part, was cool, with rain, but the latter part has been warm and drier, and vegetation has rapidly advanced. A continuation of such weather will bring the season soon up to the average of years.

GRAPE-VINES, in the grapery, will now begin to color their fruit, and by the last of the month it will be ripe. As soon as this is perceived discontinue watering, partially, and, as the fruit attains maturity, stop it wholly. If the border is dry, one good watering will answer till the crop is gathered. Stop the laterals, as they become too much extended, and regulate and tie in the spurs for next year. Vines in cold houses will not be quite so far advanced, and will just now need more attention, being careful in airing to avoid cold drafts, which cause the mildew. Damp down the walks and borders till the berries begin to color, and stop the laterals as they require it. Vines in the open ground may now be trimmed of superfluous wood, and the strength of the vine concentrated in that intended for next year's crop. Avoid, however, such close cutting as to expose the fruit to the full sun.

STRAWBERRY BEDS, now done bearing for the year, should be put in order for the next crop. When the beds are intended for more than one year, all the vines but a single row should be dug in, first giving a good coat of old well rotted manure; then lay in the runners as they grow, until they again cover the ground. If grown in rows or hills, clip off the old dead leaves, and some of the larger ones, and manure and dig in the same way. This invigorates the plants, and if runners are emitted they should from time to time be cut off. Ground should be got ready for planting new beds the last of August. If plants are wanted for forcing now is the time to lay them in small 3-inch pots.

ORCHARD-HOUSES will now be perfecting their fruit, and will require less water, though they should have enough to keep the trees in good condition.

SUMMER PRUNING should now be attended to regularly, nipping off all laterals which crowd and fill up the tree.

THINNING FRUIT should be attended to: though the crop of pears is not large many trees are bearing much more than they can perfect of good large size.

MULCH AND WATER specimen trees, intended for producing large fruit.

FLOWER DEPARTMENT.

The hurry of spring planting and bedding out being over, there will now be more leisure to attend to the winter stock, and to such plants as require particular attention. The conservatory should have the places occupied

by winter flowering plants filled with gloxinias, achimenes, Japan lilies, &c. &c.

CAMELLIAS, if not already removed to a proper place in the open air, should be attended to at once. A half shady place should be chosen till the plants are inured to the weather, when they may have more sun. Now is the time to repot.

AZALEAS that have made their growth should be removed to the open air. Syringe often, and see that they are free from thrips and red spider. Repot young plants intended for specimens.

PELARGONIUMS will be still in great perfection, but will soon fail after this time. Such as are wanted for early flowering may be headed in soon, and the others next month.

CHRYSANTHEMUMS should be shifted into their flowering pots, and have the thrifty shoots stopped in order to make stocky plants. Water occasionally with liquid manure, and plunge in the open ground.

OXALIS BOWIEI AND **HIRTA** should be potted the last of the month.

TUBEROSES should be shifted into their flowering pots.

FERNS, growing freely, may have a shift into larger pots.

POINSETTIAS should be put into smaller pots, giving them the shelter of a cold frame for a week or two.

CALADIUMS will now require a shift into larger pots.

EUPATORIUMS, and similar tender flowering plants, should be repotted and plunged in the open ground.

GARDENIAS should be planted out, in a good bed of rich soil, to obtain fine plants.

HEATHS should have the protection of a cold frame, where they can be shaded from the noonday sun.

HELIOTROPES, for winter flowering, should now be headed in and repotted.

CHINESE PRIMROSES should be kept in a cool frame. Now is a good time to sow seeds.

FLOWER GARDEN AND SHRUBBERY.

The recent fine weather has given fresh vigor to the lawn, and frequent cuttings will keep it in fine order. Roll often. Clean and neatly rake and roll the walks.

HEDGES should be clipped now, if not already done.

TULIPS, and other spring bulbs, should be taken up at once.

DAHLIAS should be staked, and, if the weather prove dry, have a good watering.

GLADIOLUS will be benefited, if the weather is dry, by a good watering.

ROSES may be layered this month.

PINKS should be layered this month.

VERBENAS should be pegged down, so as to form compact masses of flowers.

PERENNIAL AND BIENNIAL FLOWER SEEDS may be planted at this season.

SEEDLING FRUITS.

SEEDLING Fruits are the source from whence our gardens are supplied with all the superior varieties which make up a collection, and it is an object of the highest interest to encourage their growth. For this purpose enthusiastic cultivators labor a whole life time, often too without other reward than the satisfaction of having benefited their fellow men. For this purpose our horticultural societies work zealously, and offer liberal premiums and honorary inducements to those who shall produce the finest fruits. If, as Mr. Knight and some other physiologists have asserted, the old varieties will wear out, it is important that their places should be supplied by others, even if they are no better, if only constitutionally more vigorous, so that the number shall be kept good. But, without this latter view, which we cannot yet admit, there is abundant room for improvement in almost every fruit, flower or plant. Perfection has not been reached.

Nothing, therefore, should be done to check the interest in the growth of seedling fruits, but, on the contrary, greater inducements should be held out by every horticultural society in the country. If Van Mons devoted the leisure hours of a long life to the growth of seedlings, and generously distributed his gains among his friends, to enrich their gardens and increase the luxuries of their tables, it is not to be assumed that every cultivator will have the same enthusiasm or liberality in the pursuit. Those who lavishly and gratuitously bestow the results of their labors upon the public have their reward in the consciousness of having done a noble work. Many of our most valuable fruits, the Diana grape, the Sheldon pear, and the Downer cherry, not to name others, have been freely distributed by the fortunate originators. But as the results are great, and these instances rare, in order to advance more rapidly these improvements horticultural societies have endeavored to aid and encourage the work. The Massachusetts Horticultural Society, with means at their disposal,

long ago offered a series of prospective premiums, which have been of immense benefit in awakening an interest in the production of seedlings, and resulted in adding to our catalogues some of the very best fruits.

It must not be supposed that really valuable seedlings are easily produced, nor can it be expected that they should be gratuitously distributed. If this has been done, as we have already remarked, and may and will be done again, it does not follow that our cultivators should be charged as extortioners because they place a high value upon their productions. Many days and months, and often years, of patient toil and care, as well as the highest skill, are required, before a seedling of any real value is produced; perhaps one single trial may result in a great success; and a dozen or more may prove signal failures. If those who make cultivation a pastime can give away the results of their labors, it is a gratifying fact to record; but those who rely upon their skill for a living should be amply repaid for their time. The general impression that seedlings are introduced at extravagant prices is undoubtedly owing to the utter worthlessness of the greater portion of them. A really valuable acquisition will always be appreciated, and never, we believe, can be over-estimated.

These remarks are suggested after reading the recent discussion in reference to new seedlings, by the Fruit Growers' Society of Western New York, in which it was deemed important that something should be done to protect the public from imposition by the introduction of worthless seedlings. Mr. Hooker, the President, alluded to the introduction of fruits by puffing and advertisements, and hoped something would be done to interpose a corrective of the evil. Mr. Barry thought it a point of importance, and spoke of selling old fruits under eight or ten different names. He thought those originating fruits should submit their products to the scrutiny of some competent society, to pass upon their claims. Mr. Herendeen said nearly all new fruits were originated by members of some society, but their products ought to have the sanction of one before being offered to the public, and he submitted a resolution which was accepted and adopted; it is as follows:

“RESOLVED, That new seedling fruits, before being recommended and introduced for sale, should be approved by some competent society.”

Mr. Downing said there should be a committee to test fruits, as the American Pomological Society had; such a committee, if it performed its duty, would do much towards protecting the community from the frauds of venders of worthless fruits. Mr. Keach, who had some seedling strawberries on exhibition, would like to have the society endorse his judgment. He was anxious for this. Mr. Griffith concurred with Mr. Downing. He had bought so many worthless grapes he distrusted everything, but was happily disappointed in the Iona and Israella grapes. Mr. Seelye appeared to perfectly understand the question, for he said it was an attempt to deal with a slippery customer. “We cannot prevent men from selling poor articles, nor others from purchasing them. Until growers are honest, and buyers intelligent, frauds will prevail. The proposition will do if the committee will specifically denounce each fraud. Nothing else will do.” The discussion closed by adopting the following:

“RESOLVED, That the Standing Fruit Committee be requested to investigate thoroughly all seedling fruits, claiming public favor, and report the facts as speedily as possible.”

The evil complained of is an important one, and we are pleased to know it is engaging the attention of our cultivators, but resolutions will accomplish very little without energetic action. The question is one of much latitude, and we cannot admit all that was said by some of the speakers. It is not necessary that a seedling should always have the endorsement of some society, though it may be advisable. Mr. Seelye gave the best solution of the question—“Honest growers and intelligent buyers” alone will prevent frauds, and what is more, “the committee must specifically denounce each fraud. Nothing else will do.” This is true; and we only regret that the Fruit Growers’ Society did not commence the work at that meeting. There was one of the best opportunities ever offered, for the three strawberries which were discussed under the question of the best new seedlings are scarcely worth cultivation. Mr. Downing said plainly,

the Jucunda "was not worth growing." Yet we do not see that a vote of any kind was taken. The very important question proposed, viz., "What new seedling strawberries can this society recommend for general cultivation?" did not as we can see amount to anything. Some had fruited the Agriculturist, some liked it, others failed with it; one thought it not quite equal to Triomphe de Gand, which was poor praise, &c. Russell's Prolific, Mr. Hoag said, wanted high nursing; Mr. Hooker was not favorably impressed with it, and Mr. Herendeen said it was not satisfactory to him. Jucunda, about the same testimony, except Mr. Downing, whose opinion we have just given. Now we would ask, what the public learn from the Society about the real value of these three new strawberries, when they had just voted "the Society ought to investigate thoroughly all seedling fruits, and report as speedily as possible?" Absolutely nothing.

The Massachusetts Horticultural Society, through their efficient Fruit Committee, have done what the Fruit Growers' Society have resolved to do, and long ago, publicly in their reports, discarded some of the very strawberries which are now considered good by others. It has had the effect, however, to drive them entirely out of cultivation by all lovers of good fruits, and they are only grown by those who adhere to worthless things because they sell in the market, without estimating the difference in the price. We agree fully with the resolutions adopted, as being good as far as they go, and if Mr. Seelye's advice is heeded, there will be more honest sellers, and perhaps more intelligent buyers.

The trouble is, committees who have to examine and report upon seedlings often have two things to contend with, fear and self-interest, either of which are fatal to a reliable opinion. They are afraid they shall offend somebody if they condemn a seedling, and sometimes, though not always, they fear their stock, if they have any, may be rendered worthless by an adverse report. Thus we do not get at the facts only partially, and very undecidedly, and the public continue to buy and prove the variety themselves.

As regards the endorsement of some competent society, for any fruit, before it can be recommended, though, as we

admit, highly desirable and always to be obtained if possible, yet there are many instances where no "intelligent" buyer cares a fig about this. The value of a fruit is estimated by the intelligence and pomological knowledge of the grower or introducer. What would be a very fine fruit, "magnifique," as an enthusiastic Frenchman would say, with one cultivator, who has never raised in perfection the very best, would be considered of no consequence whatever by one who had frequent opportunities to test and compare. Again, prominent nurserymen or pomologists, well known everywhere, who bring forward a new fruit, give it a reputation at once, when it would be received with hesitation and doubt from unknown cultivators.

Reputation, knowledge, and integrity must have much to do, as it should, with this. A new strawberry, for instance, might be shown before a society and tested, and found to be finely flavored, well colored, firm, of large size, and beautiful form. But will the committee who make the decision, and recommend such as promising, know anything of its hardiness, productiveness or growth, without all which it cannot be recommended? Certainly not. And so it is with the grape and other fruits, and hence we thank Mr. Seelye for his forcible remarks. "You cannot prevent men from selling poor articles nor others from purchasing them. Until growers are honest, and buyers intelligent, frauds will prevail."

The time has passed when every new fruit, though it appear well, must be considered worthy of a name. Promising it may well be, but the vital question is, will it take the place of any existing sort? If not, it only adds to the number and perplexes the public to be constantly selecting, when in reality there is no selection to be made, the old being preferable to the new. The Fruit Committee of the London Horticultural Society made a report on strawberries a week or two ago, which has just been received, and we give it as a model for similar reports by our horticultural societies:

"To a fine looking strawberry named Dr. Hogg, from Mr. Turner of Slough, a first class certificate was awarded. It belongs to the British Queen class, but unlike the British Queen it colors regularly all over, and is said to be hardy

and a great bearer. It was raised by Mr. Bradley, the originator of Oscar, and one or two other good kinds. A strawberry named Denbeigh Seedling, sent by Mr. Oldham, a large, coarse kind, on being tasted proved *too acid* to merit commendation. Sir Watkin, a conical dark fruit, a cross between Sir Harry and Black Prince, was also shown, but it did not meet with commendation."

It will be seen that a fruit too acid is at once condemned. It is not asked if it is good for market, or whether a great bearer, or anything else. It is sufficient to know it is *sour*, and therefore worthless where there are plenty that are sweet. Such reports by our own societies would save the public from immense loss in money, time, disappointment, patience, and vexation. We need only add that the report on strawberries prepared by the committee for Massachusetts, for the next meeting of the American Pomological Society, will be a model of its kind.

CITY AND COUNTRY LIFE.

BY D. W. LOTHROP, WEST MEDFORD.

THE love of city or country life is so much a matter of habit, taste and interest, that it would be a little hazardous for any one to broadly decide which is more agreeable, except for himself; and even here he may sometimes be mistaken. If Mr. and Mrs. A wonder how Mr. and Mrs. B can live in dull, monotonous seclusion, buried though not dead, in the country, Mr. and Mrs. B are astonished how the large city, with its deceit, vanity, misery, noise and crime, can find residents. In the hottest of the season the former like only to spend a day or a week in the country, while the latter would hardly venture to stop a night in the city. Some persons are ludicrously undecided which they prefer, city or country; for they are perpetually changing from one to the other, contented in neither.

One of the ancient philosophers said that of all passions he preferred to cultivate the love of money, as it was the most enduring. Many at the present day, for pretty much the

same reason, cultivate the love of trees and flowers. Essential as the former love is, trees and plants are property, while they present something new and interesting every season, and at every growing month of the season. For a man who does not love them, the country is no place. To him country life is irksome and dull; having no lasting pleasures, and only to be borne for a time. He likes a multitude of human faces, lives in them, and depends upon them for his enjoyment. There is a legion of such persons; but, in all charity, they betray a sad lack of that manly character which looks more to its own individuality as the source of its daily blessings, rather than from it.

To men of opulence, in the middle or decline of life, with fine tastes and love of nature, the country undoubtedly presents the only field in which they can fully develop themselves and reap the highest enjoyment. The earth was given to man to cultivate and embellish; and perhaps it is the duty of every man to do as much as his circumstances will permit him towards this end. Here, in the spirit of devotion, if they choose, they may read the vast living page spread out before them—which rarely leads us far astray—and behold the master-workmanship of Nature in its ever varying changes. They see less, too, of artificial life, and even of artificial religion, than in the crowded metropolis. True, they should have more or less of appreciating and sympathizing friends, or neighbors, else, without peculiar and strong minds, country life would not be agreeable. Hence persons, intending to take up a rural residence, should select a neighborhood in which there would be likely to be a good share of congeniality of feeling, or of social reciprocity. With such, they can exclaim with Cowper, the most perfect of country gentlemen:—

'Tis pleasant, through the loop-holes of retreat,
 To peep at such a world. To see the stir
 Of the great Babel, and not feel the crowd.
 To hear the roar she sends through all her gates
 At a safe distance, where the dying sound
 Falls a soft murmur to the uninjured ear.

The hardy farmers of the country, to whom circumstances mostly have dictated their vocation, cannot all be said to lead

a rural life from choice. Some are tolerably contented, but many of them have seen enough of their locality, and too little of others and the world; hence they are uneasy, and long for different occupation. The more active and ambitious of them seek a life in the large towns and cities, and as their object is principally to make money, they do not ask, in early life, which is the more conducive to health or happiness, the country or the city. This is all very well; for many of them return with a competence, embellish their estates, and spend their days in contentment. If disappointed in the latter, they are more at ease in the former.

Though the country people are fairly educated and generally courteous, it must be confessed that in some rural districts the privileges presented for social intercourse, amusement and improvement, to persons of considerable refinement, are few indeed. By the inhabitants of a few of these communities, a man of taste is frequently ridiculed to such an extent as to make his position intolerable. They visit him at unseasonable times, pry into his private affairs, exhibit petty jealousies at his improvements, and bore him about the cost of everything, till his patience is exhausted, when he treats them coolly, and henceforth they become his enemies. True, this results from ignorance and a want of good breeding, more than malice; but in some few districts ignorance is respectable! There are certain social laws founded in nature, which no humanity can ignore; and persons, or rather families, intending to take up a residence in the country, as above intimated, should bear these things in mind.

Though Massachusetts holds a high rank for her general education of the masses, even she has not as yet arrived at its limit. At all times, of course, we have a rising generation to be instructed. Hence education is a perpetual labor, always doing and never done. It is the rock of Sisyphus, ever recoiling upon our heads. While wealth is passed from generation to generation, or never lost to the community, moral and intellectual acquisitions are buried with the possessor; only his works and example remain. What we know we must acquire ourselves; although the facilities for its acquisition are yearly increasing. Agricultural colleges

are now becoming very numerous; but whether they will meet the precise point aimed at, is not our object here to discuss. Undoubtedly they will have a general good influence on the people, if not a special upon agriculturists.

For education in many important things, no one can deny the advantages of the city over the open country; but it is street, drawing-room or lyceum education, and keeps a man rather superficial, while it may give him polish. If the country is the better place for the deep and attentive study of books, the natural sciences, and most everything else but man and trade, the city may give a better knowledge of their application, and the study of human nature. That great cities are important in the order of civilization, no man of sense can deny. They are the life of the agriculturist. To the habitual country resident, the city, for a time at least, is more joyous; his mind becomes quickened, his step more elastic, his ambition awakened; and the mass of human beings elbowing each other in the motley crowd, is a priceless pleasure to many persons of social temperament, whose life is in the *presence* if not in the "society" of others. In fact, the throng of humanity—to say nothing of the great "sights" and curiosity shops which abound in cities—is at times very agreeable even to the most stoical or cynical of rustic philosophers, and an antidote for *ennui* in the sequestered and neglected of the softer sex (residents of dreary rural districts,) waiting or seeking for the unknown good.

Respecting the relative health of city and country life, the advantages are generally admitted to be in favor of the latter; at least, statistical facts so prove it. Yet there is much hypochondriacism, imaginary disease, and a good share of dosing and drugging in the country, aside from the genuine sickness. Though some may feel disposed to doubt the superiority of the country in this respect, in regard to the greater vigor and health of children there is probably less ground to gainsay it; at least we feel certain that the mortality is not so great in children under ten years as in some of the worst districts of European cities, which amounts to 56 per cent. Farmers, however, and the whole rural population are more exposed at all seasons of the year than

those of the city; and the dampness of the spring months, together with the prevalence of east winds, over-exertion and sudden chills, frequently bring on rheumatism, and fearful pulmonary diseases that end in death. But during a great portion of the year, the air is so pure and salubrious that the habitual out-door laborer forgets what physical exhaustion is. He works on from month to month and grows fat. What he expends through his hands he generates in his lungs.

Numerous statistics of mortality show "that vital force diminishes, and the force of mortality increases, generally with the density of the population."

The average of deaths in Massachusetts (not including Boston), from 1842 to 1848, was 31 years; in Boston 21.64. In 1811 to 1820, it was 27.75. In some parts of the state it is higher; as in Dorchester, 32; in Plympton, 41. In New York state, 29.9; in New York city, 19.9; city of Philadelphia, 20.47; city of Baltimore, 20.43; city of Louisville, 17.86. In England it is 29.64; in the city of London, 27.

Out of a population of 1,000,000 in England, enumerated in 1841, in large towns and cities, and the same in the country or less densely peopled districts, from all causes, in the former the deaths were 27,073; in the latter, or country, they were 19,300. Out of the 95 causes, besides old age, 14 produced more deaths in the country than in the city. The deaths from old age were in the city districts, 1,943; in the country, 2,676—37 per cent. more than in the city, which is an indication of its healthiness. Of the whole number of causes, the proportion of mortality to one million of the living is 40 per cent. greater in the city than in the country. Or while 100 die in the rural districts, 140 die in the dense towns, among the same number of people. In Liverpool, having about the same number of inhabitants as the rural part of the County of Surry (229,733,) the deaths were 80 per cent. greater than in the latter.

These brief statistics, probably near the truth, show rather conclusively the general advantages of the open country in regard to health and longevity—at least in Old England and in New. Many more might be given, but it is deemed unnecessary. In miasmatic districts, as in the western

country, probably the facts would be different, perhaps the reverse. Besides, says Dr. Edward Jarvis, vital force is much "owing to the difference of organization, much to development, but much more to self-management." Locality, indigence and ignorance, also have a controlling influence upon it. Villermé, of France, observes: "Taking together the whole of the French population, human life is protracted twelve years and a half among the wealthy beyond its duration among the poor."

The sanitary condition, however, of large cities in the United States is being greatly improved. Boston is not so open and airy as some other cities, but its beautiful Common—considered the lungs of the city—to say nothing of the lesser parks, will never be less; while the large tract, the Public Garden, lately reclaimed from the sea, gives promise that it will continue to be one of the most healthy cities in the Union. New cities, as they are founded, or increase, will probably be more liberal in the width of their streets, and in the number and extent of their public parks. But notwithstanding all these new improvements, suggested by science and art, the open country will still possess many advantages over the best of cities, and millions of people to appreciate it.

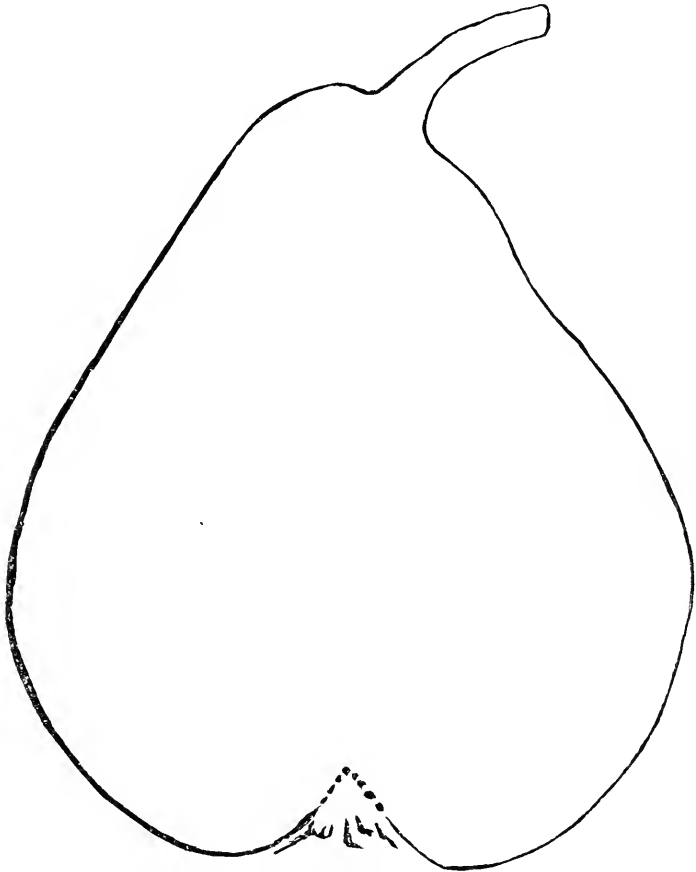
GENERAL TODLEBEN PEAR.

BY THE EDITOR.

THE General Todleben pear was received by us, from Belgium, a few years ago, and, as often happens with a new variety which we are anxious to fruit as early as possible, it has been provokingly slow in coming into bearing, no doubt owing, in some degree, to unusual efforts to accomplish this object. In the spring of 1861, scions from the imported trees were inserted in a very vigorous tree, which grew well and made a fine head, but unfortunately the succeeding winter was one of unusual severity, and the tree, a very large one, from the loss of so much of its wood, was injured, and it has not yet borne; other trees, however, grafted since then, are

this year bearing handsome specimens. Fortunately, Col. Wilder, who received this variety at the same time as ourselves, had a tree in fruit last year, and kindly sent us a specimen, from which our drawing and description were made.

The General Todleben (FIG. 12) has already been noticed by us, (Vol. XXV., p. 297,) and a brief description given of it, copied from the *Illustration Horticole* of Belgium, in which it was beautifully figured. In appearance it resembled



12. GENERAL TODLEBEN PEAR.

the Bartlett, being of large size, bright yellow, and ripening in January. It was highly recommended as one of the finest winter pears.

The tree is a rather vigorous grower, and has a rambling habit similar to the Winter Nelis, and like that variety is difficult to bring into the pyramidal shape. The present year our opportunities to judge of its real value will be greater,

but so far as the trial of a single specimen is any index, it appears to be a fine addition to our winter pears.

Size, large, about three and a half inches long, and three inches in diameter; Form, pyramidal, large at the crown, slightly contracted about the middle, and narrowing to the stem, slightly uneven in its outline; Skin, slightly rough, yellowish green, partially overspread with thin tracings and patches of russet; Stem, medium length, about three quarters of an inch long, moderately stout, little fleshy at the base, and obliquely inserted in a small cavity formed by a projection on one side; Eye, very large, open, and moderately sunk in a large open basin; segments of the calyx, entire, long, broad, reflexed; Flesh, yellowish white, coarse, melting, very juicy, slightly sugary, with a pleasant aroma; Core, large; Seeds, small, flattened, dark brown. Ripe in December and January.

POMOLOGICAL GOSSIP.

FINE STRAWBERRIES.—Notwithstanding the very general complaint of the shortness of the strawberry crop, we are glad to record evidence of superior specimens in some parts of the country. The Gardeners' Monthly, in giving an account of the Rose and Strawberry Show in Philadelphia, remarks thus, "we must say however, in spite of all the 'improvements' made in new varieties, there were few if any kind exhibited, that drew more attention than the magnificent Hovey's Seedlings of Mr. Hammer, who continues to be its great champion in this region." This and the Agriculturist, the Triomphe de Gand, and the Albany, were the decided favorites out of 29 varieties on the table.

NEW STRAWBERRIES.—The number of these if not legion is still large. In Philadelphia, "Great Eastern," exhibited last year, was still considered as "maintaining its ground," as was also the "Stinger," a variety exhibited last year as the "Union," but which name has been dropped, on account of that name being already appropriated for a variety which is,

however, believed to be the same as Victoria. At the Fruit Growers' Society's Meeting, held at Rochester, Mr. Keech of Waterloo exhibited three seedlings, and Jacob Moore of Brighton ten seedlings, some of which were highly commended by the committee. Among them was one raised from the Wilson, fertilized by the T. de Gand, which was pronounced "very good, large and productive, one of the best." E. Ford & Son, Syracuse, presented one called Hastings, and another called Onondaga, a cross between Hovey's Seedling and Victoria; berries large, rather soft, good flavor, and is spoken of as a promising variety. At a show at Chicago, at the Prairie Farmer Office, some seedlings were also exhibited; among these the Awarding Committee would particularly remark on the beautiful appearance of the Hagan Seedling, exhibited by Seth Wadham; this received the seedling prize of \$25; the Morgan Seedling, by James Morgan, large, uniform and good, both in flavor and color, received the prize as the best market berry. Waterman's Seedling, the committee say deserves further trial, and favorable mention is made of two seedlings raised by Dr. Blaney. Mr. F. Brill of Newark, N. J., has a new seedling called Durand's, which he considers superior to any in existence. Strawberry growers will have enough to do to prove all these varieties the next five years, and there will be no lack of excitement among enthusiastic amateurs. It is only to be hoped that these "improvements" on old sorts will be more permanent than they have been for the last 25 years.

MORE FINE GRAPES.—At the recent show of the Royal Botanic Society of London, July 3d, there was a magnificent display of grapes, no less than 200 bunches, besides 9 baskets of 12 lbs. each. As heretofore, Mr. Meredith of Garston was foremost, with a bunch of Hamburgs weighing 7 lbs. 5 oz.! perfectly colored, and in all respects worthy of Mr. Meredith's high reputation as a grape grower. In the class of 3 dishes, the Black grapes of Mr. Meredith stood out in bold relief from all others with which they were associated, being not only large, both in bunch and berry, but wonderfully well colored, with a beautiful bloom; they consisted of Black Hamburg, Black Prince and Trentham Black; 3 bunches of Marchioness

of Hastings weighed 8 lbs. 3 oz. ; fine specimens of Golden Hamburg and Buckland Sweetwater were shown ; as likewise Black Prince, and Champion Hamburg. The Muscats were fine specimens of culture, but, with the exception of one lot from Mr. Turner—which “were all that could be desired and deservedly awarded the first prize”—were unripe.

THE BEST NEW STRAWBERRIES.—At the meeting of the Fruit Growers of Western New York, held at Rochester, June 27th, an account of which we give in another page, one of the questions before the meeting was, “What new seedling strawberry can the Society recommend for general cultivation?”

SUMMER-PRUNING THE PEACH.

FROM THE GARDENERS' CHRONICLE.

THE process of summer-stopping, or pinching the peach, has been fully described in a previous volume. It is a system introduced by the best French cultivators, and has been eminently successful under their treatment. But as it is somewhat different from pinching, as applied to the pear, and requires to be done more cautiously, and at the proper time, we are glad to present the views of an English writer, who we presume to be Mr. R. Thompson, which will give additional, or more precise information than the article we have alluded to, though with the illustrations accompanying the same the process will be better understood, and the practice rendered more simple and plain.

Mr. Brehaut, who has been the first to put this mode in practice among the English cultivators, is the author of *Cordon Training*, copied in our pages and published in a volume with additional notes by us, and his long experience, as well as successful management of the peach, will give additional value to the system introduced by the French, and now generally practised by the most skilful cultivators :

Though the importance of Summer Pruning in the case of stone fruits, whether grown on walls or in orchard-houses,

is fully acknowledged in theory, the evidence of one's senses shows that it is not always carried out in practice to an extent which would be beneficial, or with the promptitude which is desirable in a matter of such vital importance to the health of the trees. Hence we are glad to welcome an addition to the gardener's library in the shape of a little pocket volume,* in which, besides much other seasonable information, we find that under the designation of "close pruning," as applied to the peach tree, this subject is very clearly and forcibly discussed; and we welcome it the more readily, inasmuch as a reference to the chapters devoted to the branch of the subject at which we have hinted, will, we have no doubt, usefully refresh the memories of experienced men, while it cannot but prove extremely instructive to those who are still to be classed amongst the learners.

Though not a novelty, it is within comparatively few years that much attention has been devoted to this subject of close pruning or summer-stopping, which is the same thing; but it has been systematized by certain French cultivators, especially by M. Grin of Chartres, who recommends that the young shoots should be pinched back to two leaves, so as to form short spurs, which year after year bear fruits of equal size in every part of the tree. While admitting that good crops are sometimes obtained by long pruning, yet, M. Grin observes, "nine out of ten fail because they do not possess the constant practice and special science required for such a style of pruning. Some eight or ten successive operations are required in long pruning, all requiring an exact appreciation, which does not," he says, "belong to the generality of gardeners. On the other hand, close pruning has the immense advantages of simplicity and economy of time and money. There are no tedious tyings-in of the summer or winter wood;" and what is, perhaps, of more importance, "there are few or no amputations of important branches, and this alone constitutes an appreciable gain," for every amputation, however well performed, causes a perturbation in the economy of the tree.

* The Modern Peach Pruner. By the Rev. T. C. Bréhaut, Author of "Cordon Training of Fruit Trees." London: 171 Fleet Street.

It is obvious that in carrying out this system of pruning, everything depends on the operation being performed at the right moment, and on its being repeated from time to time as may be required, a too sudden check on the one hand, or a too much extended development on the other, being alike destructive of that balance of growth, on the securing of which, the chief merit of the system may be said to rest. Hence, at the season when young growth is active in trees of this character, very close attention and very prompt action are imperative.

We have already mentioned that the young shoots are to be pinched in to two well-developed leaves, the two or three budless leaves at the base not being counted. This is the general rule which M. Grin lays down. The time for this first pinching—varying, of course with season and locality—is usually in May, when the young shoots have made about 4 inches of growth. At the second pinching, which takes place when the growth which springs from the axils of the two leaves is about two inches in length, the second growth is removed altogether, so as not to favor the production of a strong shoot, which its presence would do, but to direct the whole action of the sap to the nourishment of eyes at the base of the spur. M. Grin's system, it must be remembered, has been perfected in the climate of France, and the experience of his expounder, the author of the book we have mentioned, has been gained in the favored island of Guernsey. A modification of the severe treatment we have indicated, would therefore, it might be supposed, be necessary in our moister and less illuminated climate.

And such M. Bréhaut and other experienced fruit growers have found to be the case, the results of the experience of this gentleman being summed up in these words:—"The safest, the most profitable, and the simplest way is to make the first summer-stopping of the shoots at four leaves, as soon as at least six full-sized leaves are developed. These four good leaves will each have a bud or buds in their axils, and there is now length enough in this shoot to satisfy any pruner; for if these four buds are not to bear, where does the long pruner expect his fruit to be? And if they are to bear, what

need is there for more growth beyond these than is sufficient, as in the vine, to nourish the fruit?" When the second growth from this has made four leaves it is reduced to two, and if after this the lower buds are prominent and well-formed, the third growth is to be reduced to one leaf as soon as two are made. If, however, at the time of regulating the second growth, the buds do not appear to be swelling favorably, the shoot is to be cut below the point of junction of the first and second growth, in order to concentrate anew the summer sap, and to develop the lower buds without causing them to burst. This plan, it is stated, is almost sure to succeed.

We turn for a moment in conclusion, to notice a system of leaf-pinching which M. Grin has explained in the "Revue Horticole." It is applied especially to those strong shoots verging towards "gourmands," which make lateral growth, and are apt to push away their lowest buds too far from the main shoot. When such buds are close home, the shoots may be turned to good account in the formation of a tree, and the way to secure this, according to M. Grin, is to pinch back the leaves. Such lateral shoots always have as their precursors a pair of small leaves close in the axil of the principal one. If these axillary leaves, just at the right moment, when they have grown perhaps an inch, or rather more in length, have their tops pinched off to the extent of about one-third of their length, the sudden arrest of the sap results in the formation of two or more buds near the main shoot, instead of their being carried outwards by the rapid extension of the free-growing lateral. An easy remedy this, for what would otherwise result in a blemish to the tree.

FLORICULTURAL NOTICES.

NEW LILY.—We think we stated, at the time of the introduction of the *Lilium auratum*, that aside from its own intrinsic merits, should it not prove hardy, of which there were then some doubts, it would be highly important as a means of

hybridizing, and perhaps improving the Japan lily. This has proved true. At the time the first bloom was exhibited, from the first plant imported from Japan, three years ago, which blossomed the same year it bloomed in London, we obtained some of the pollen of the flower, with which we fertilized some blossoms of the *L. Melpomene*. One of these seedlings has just flowered and shows unmistakably the hybridization. This seedling has a flower as large as *L. auratum*, but in place of the saucer-shaped flowers of this species it has the circular outline of *L. speciosum*, with the ends of the petals beautifully recurved. Its size is quite as large as *L. auratum* (12 inches across) and in place of the yellow band in the centre of the petals it has the distinct and elegant crimson band of the Japan lily, which lively color is in marked contrast when placed side by side with the *auratum*. It has the foliage of the Japan, but blooms in July, at the same season as *auratum*. To sum up, it has the *size* of *L. auratum* and blooms at the *same time*, while it has the *foliage* of the Japan, its exquisite colors and spots, and the same beautifully crowning centre, each petal rolling back so as to form a perfect ball. This grand result shows how much may be achieved by continued attention to hybridization, in the lily as well as other flowers.

GEN. GRANT GERANIUM.—This is the name given to a very large, showy and superb variety of the Zonale geranium, raised we believe in Cleveland, Ohio. It has a pure green leaf of moderate size, and an immense truss of the most brilliant scarlet flowers. In habit of growth, freedom of bloom, brilliancy of color, and size of truss, it surpasses any of the foreign varieties we have yet seen, and we can claim an achievement which even the late Mr. Beaton, who devoted thirty years to this plant—and so greatly improved it withal—did not accomplish. With this, and some of Mr. Beaton's race of Nosegays, we have no doubt great success will attend the exertions of any cultivator who will give his attention to this tribe, now deservedly ranking at the head of effective bedding plants.

NEW PLANTS.—In consequence of the present duty upon plants, and the rate of exchange, as well as duties and freight

payable in gold, the importation of new plants, adding the risk of the voyage, is anything but a profitable business, and the additions to our collections the last two or three years have been limited to the most common things. When this state of things is to be altered it is not possible to even guess, but if we are prevented from actually possessing just now the really beautiful things which are introduced or originated by the English and French cultivators, we certainly desire to be kept informed of all that is valuable, that when the opportunity offers we may select and add them to our present stock. With these views we notice the following, as some of the prominent plants which attracted attention at the late International Exhibition in London :

Maranta Lindenii, a beautiful plant with fine shaded foliage, the under part especially very prominently lined ; *Bignonia ornata*, a very handsome leaved climber, white running into the glossy green from the middle, irregularly ; *Cyanophyllum spectanlum*, something after the style of *magnificum*, but with leaves more oblong, and scarcely of so gigantic growth ; *Dichorisantra musaica*, the most distinct and beautiful of the group, with leaves of a broadly ovate form, having multitudinous lines of white running across in a deep groove, as if bored by an insect ; *Dracæna albo marginata*, having a pale green-centred leaf, with golden edges ; a *Coleus*, after the style of *Verschaffeltii*, but having more finely formed leaves ; *Coleus Gibsoni*, fine, like its compeer, with well-formed stiff foliage, and perhaps a useful out-door plant in some localities ; *Phormium tenax variegatum*, a splendid object. These are but a few of the most noted, exhibited by Messrs Linden of Brussels, and Veitch and Bull of London, who carried off the prizes in the order of their names.

GUNNERA SCABRA is spoken of as a hardy herbaceous plant, with leaves much larger than those of any rhubarb. It is said to be slow of increase, but on account of the size and beauty of its leaves it well deserves much more extensive cultivation than it has hitherto received. A specimen exhibited at the Royal Horticultural Society attracted much attention.

THE NEW CLEMATISES, *C. Jackmannii* and *violacea*, are beautiful additions to this fine class of climbing plants. These two new sorts have intensely deep purple flowers of large size, and are stated to be quite hardy. Specimens exhibited before the Massachusetts Horticultural Society, by F. Parkman, were greatly admired.

VARIEGATED SAXIFRAGE.—One of the most beautiful of variegated leaved plants is the *Saxifraga tricolor*, in habit and growth like the old *S. sarmentosa*, but with foliage delightfully variegated with green, crimson and white. As a plant for suspending in fancy baskets it stands at the head of all others, and when generally introduced it will be considered the most admirable for this purpose. It grows and spreads as rapidly as the *S. sarmentosa*.

SEDUM SIEBOLDII VARIEGATA.—This is another beautiful addition to our stock of hardy ornamental foliaged plants, alike adapted to pot culture or the open ground. The beauty of *S. Sieboldii* is acknowledged by all who have seen it under pot culture. The *S. variegata* is still more beautiful, with its round fleshy foliage, margined with gold. As a plant for suspending in baskets it will form, with the Variegated Saxafrage, an exquisite addition to the conservatory or parlor.

GARDEN GOSSIP.

WELLESLEY, THE RESIDENCE OF H. H. HUNNEWELL, ESQ. This fine place is yearly becoming more and more interesting to all lovers of beautiful trees, magnificent shrubs, choice plants, and landscape effects generally. Since Mr. Hunnewell's visit to Europe—profiting undoubtedly by the examination of the handsome places in England, and on the Continent—he has projected many improvements about the grounds, one of the most important of which is a rockery. He has also erected a grand conservatory near the house, which it adjoins by means of a covered corridor.

Availing ourselves of the polite invitation of Mr. Hunnewell, with several gentlemen, we visited Wellesley, just at that season when the rhododendrons and azaleas, for which it is noted, were in perfection. This was in the early part of June, a lovely day, just cool enough to enjoy the walk, a rather long one, through the entire grounds, and examine carefully the large collection of coniferous trees, which never were in better condition, notwithstanding the very severe winter.

Of course, the main feature was the rhododendrons and azaleas; these, particularly the former, though magnificent, were not so profuse in bloom as usual. The winter, though it did not that we could see injure the foliage of a single plant, destroyed many of the buds, just as the buds of the peach are killed without harming the tree. Many of the clusters instead of bearing large and full, only opened three or four flowers, and many were quite destroyed. Still there were enough to make a glorious show. The old plantations have made a fine growth, and some of the deep colored sorts were particularly attractive. Several new ones have been added the past year, but whether hardy or not, remains to be seen. One of the best of these is Nero, conspicuous by the bold spotting of its large and deep colored flowers. If hardy it will be a great acquisition. The azaleas were past their best, but the quantity of fading blossoms told how fine they were a week previous. The azalea has this advantage over the rhododendron, that it gives us an infinite variety of colors, in all the shades of pink, rose, salmon, buff, orange, crimson and fawn, while the rhododendrons, with few exceptions, offer only different shades of rose and crimson. And while the rhododendron, on account of its broad deep green foliage, will ever claim superiority, the azalea is no less desirable for masses of coloring and grand effect.

Passing from the broad masses of these shrubs, which form immense banks backed by the old native pines, which here seemed to shelter and encourage them into their growth, we enter the winding walks, upon either side of which are planted the collection of coniferous trees. Here they flourish with unusual vigor, and, protected somewhat

by the native pines left here and there for the purpose, some, which in exposed places get more or less injured, appear here as hardy as an oak. The beautiful *Cupressus Lawsoniana*, now some 6 or 8 feet high; *Thujopsis borealis*, a fine hardy tree; *Cryptomeria japonica*, though slightly browned, appears to be quite hardy; Deodar cedar will not stand, losing its leading shoots; *Abies Douglassii*, two or three specimens which have in some years lost their leading shoot were now perfect; *Abies Nordmaniana* is a slow grower, but it is quite hardy; *Picea pinsapo*, though usually hardy, was slightly browned in some of the specimens; the new Japanese *Thuja*s and *Thujopsis dolabrata* have stood the winter unharmed.

From this portion of the ground we passed through an arched rockwork, constructed a year ago, and now beginning to show its character. Among the rocks, which form a feature adjoining the archway, were planted a great variety of ornamental leaved plants, some hardy, and others wintered in the house and kept for this purpose. *Begonia Rex* is one of the best for this object, as it holds its color well. Some of the *caladiums* grow very freely, and mixed with exotic ferns a very beautiful effect is produced.

From this point, a short walk brings us to that conspicuous feature of the place, the Italian Garden. This improves greatly, with the age of the trees; all were clipped in the most perfect manner. The *yuccas*, *agaves* and *yews*, which ornament the vases along the parapet, have attained a good size, and now produce that fine effect so characteristic of the Italian style. It is here that the latest improvements have been made. The steep sloping bank, heretofore covered with its natural growth, has been cleared away, and the foundation laid for an immense rockwork, connecting with this garden by a rustic bridge, and to be partially shut out by a plantation of evergreen trees. Rocks weighing 2 or 3 tons have been brought a long distance, and the whole has been a work of so much labor that its completion is deferred until next winter. All that has been done was accomplished since November, and Mr. Hunnewell, as well as Mr Harris, his gardener, deserve great credit for the style in which they have carried out the plans. It would be hardly fair to

judge the work now, but it is very free from the artificial character which usually mars all attempts of this kind. It will form a delightful change, from the complete artificial aspect of the Italian garden, from which it is approached, to the finished and gardenesque grouping of trees and shrubs, upon which it opens, by a narrow path to the lawn.

But that which has added much to Wellesley is the grand conservatory, sixty feet long and twenty wide, with span-roof, connecting with the house by a corridor, and the opposite end with an alcove, in which is placed a beautiful statue, a copy of the Farnesian Flora. The interior is fitted with two stages which rise from the central walk to the sides, upon which the plants are placed, and there is a balustrade all round, from which are suspended baskets of elegant drooping plants, the whole having a grand effect, as viewed from the entrance, with the statue in the distance. At this time it was filled with superb specimens of pelargoniums, fuchsias, verbenas, begonias, caladiums, &c. It is just what such a fine place required, and the pleasure it must afford, before the out-door plants are in perfection, and after the early frosts have cut them off, can only be appreciated by one who enjoys them with the enthusiasm of Mr. Hunnewell. In winter it will form a grand place for fine specimens of palms, and other plants, which decorate the lawn.

Time and space would fail us to enumerate in detail all the things which make Wellesley one of the most interesting to visit. The grape houses were filled with a fine crop, and the peach houses show no scarcity of this delicious fruit. Preparations are now making to extend the culture of the peach, and a new house will be put up the present season.

After two or three hours spent in looking over the grounds the company enjoyed the hospitalities of Mr. Hunnewell, and returned home delighted with their visit, and wishing that there were more such places in the vicinity of Boston, and more gentlemen of wealth with the same taste which has made Wellesley the finest residence around our city.

REVIEWS.

PRACTICAL AND SCIENTIFIC FRUIT CULTURE. By C. R. Baker, of the Dorchester Nurseries. Illustrated. 1 vol., 8vo., pp. 523. Boston, 1866.

We had hoped that the day had passed when our works on horticulture should be simply the make up of extracts from a hundred authors, and generally so mixed up as to render the reader unable to detect what is copied and what belongs to the author. Our horticultural literature, too much of it, has been a hash-up of foreign works; yet this is perhaps better—if we can have it without admixture, for we have confidence in one who understands his subject—than ill-assorted extracts.

But what appears remarkable is the fact, that the author of the book before us should have such a consummate idea of his capacity to enlighten the public on fruit culture, that he should ignore every American author, and every American book but one. Neither Manning, Downing, Barry, Elliot, Fuller, or any other pomological writer, is mentioned in the authorities to which the author very modestly says he is indebted. Nor is our own Magazine, the Horticulturist, or the Gardeners' Monthly, allowed an existence. The exception is the Proceedings of the American Pomological Society, from which is taken the entire list of fruits (70 pages) compiled with immense labor by Mr. Barry, under the supervision of the Fruit Committee. It may be doubted whether the author ever studied any of the writers we have named.

Making a book is one thing; giving the public the results of a life of experience and observation, is another. Practically a hundred pages on the "Nature of Storms," "Stagnant Air," "Aqueous Vapors," "Cold," "Electricity," &c., are of no great importance; nor chapters on soils, where they are but parts of what such old writers as Davy, Boussingault, and others, have given us years ago. Nor are whole pages of extracts from Fitch's work on insects of any merit unless the author can add some new facts in reference to their destruction.

But we need not go further into detail. The book is a compilation of extracts here and there, from Girdwood's *Encyclopædia*, Blodgett's *Climatology*, Patent Office Reports, (!) *Bibliotheca Agraria*, Tull's *Horse Hoe Husbandry*, *Re de Rustica*, Espey on Storms, and forty other books which have no reference to "Practical" Horticulture whatever, and are almost as useless as Thomas's *Almanac* or the Patent Office Reports.

The author, in his preface, says, "We have felt ourselves called upon to submit the results of our researches and experience to the public in print." We can only regret that his "researches," for the credit of our horticultural literature, had not been made somewhere else than among old authors, whose labors he has appropriated, and his experience in his "legitimate business" a little greater, that he might ascertain how ignorant he is of the very first principles of the science he attempts to expound by the aid of others. It is unfortunate that so much good paper and neat type should be wasted.

HIGH FARMING WITHOUT MANURE. Six Lectures on Agriculture, delivered at the Experimental Farm at Vincennes. By M. GEORGE VILLE, Professor of Vegetable Physiology at the Museum of Natural History, Paris. 1 small vol., 12mo., pp. 108. Boston, 1866.

The subject of chemical fertilizers has attracted the constant attention of English and Continental cultivators, and much valuable information has been elicited through the labors of Messrs. Lawes and Gilbert, in England, and M. Ville, the author, and others. The present small volume is the substance of six lectures, delivered by M. Ville, illustrating his system of "High Farming without Manure." Our space does not admit of giving so full an account of the author's experiments as we could wish, and we must refer our readers to the volume, which is full of interest to every practical man.

M. Ville pursued the right course to demonstrate his views. To remove all doubts of any error, he took calcined sand for

his soil and common flower pots for his field, and ten years of assiduous observation and experiment led him to recognize that the aliment preferred by cereals is—*nitrogen*; by leguminous plants—*potassa*; by roots—the *phosphates*; that is, these were the *preferred*, but not *exclusive*; for these three substances, in various proportions, are necessary to each and all, and even *lime*, which renders humus assimilable, must be added. These facts M. Ville afterwards demonstrated, in the soil of a field at the Imperial Farm of Vincennes, in the presence of 200 farmers and others interested in the progress of agriculture. We commend this little volume as well worthy of study by our cultivators.

General Notices.

LILIUM AURATUM.—I am of opinion that as yet we know but little of the magnificence of this lily, which I imagine in a year or two will assume a character never before anticipated. In the autumn of 1863 I purchased a small bulb, which, in the following year, grew two feet nine inches high and produced one flower. Last season it reached the height of six feet six inches and furnished seven fine flowers; and now it has set thirty-two flower buds upon a stem eight feet four inches in height, which girths at the base three inches. Its leaves, about half way up the stem, measure from tip to tip twenty-two inches.—(*Gard. Chron.*)

ARUM DRACUNCULUS.—This is scarce in gardens in this locality. I planted a moderate sized bed of it four years ago, and every season I have plenty of its purple spathes, which this year are unusually fine, six or seven being unfolded every morning in succession. This plant is common in the southern parts of Europe. In England it is perfectly hardy and is easily propagated, yet generally speaking it will not thrive here; the soil being gravelly it begins to decay just before its period of blooming.—(*Gard. Chron.*)

Societies.

FRUIT GROWERS' OF WESTERN NEW YORK.

The summer meeting of this Society was held at Rochester on the 27th of June. The attendance was not large, though quite a respectable number of experienced fruit growers were present. Owing to a severe hail

storm which visited Rochester, a few weeks previous, the show of fruit was limited.

The meeting was called to order by the President, H. E. Hooker, and proceeded to appoint a committee of three to present subjects for the consideration of the meeting. During the absence of the committee in their labors, reports were made in relation to the fruit crop: apples and pears, not very promising; grapes, promising; peaches, a failure.

The committee reported the following questions for discussion:

1st. Under what checks or restraints should seedling fruits be introduced, to guard the public against deception?

2d. What new seedling strawberries can this Society recommend for general cultivation?

3d. What is the experience of cultivators in regard to the hardiness of the new grapes during the past winter?

4th. What grapes have been preserved most successfully during the past winter?

5th. Is a rich soil necessary for the production of good grapes?

6th. Have there been any recent experiments made for the prevention of mildew on hardy grapes?

After a discussion on seedling fruits, which we have alluded to in a previous page, the society proceeded to the consideration of the other questions. We copy the report:—

3d. What is the experience of cultivators in regard to the hardiness of the new grapes during the past winter?

Mr. Griffith—Had difficulty last winter with young plants. The roots froze to a large extent. All varieties suffered alike. The soil was generally loam. The wood was not generally ripened last fall. The old plants stood well. Think it best to cover all varieties the first winter.

Mr. Moody—Exposed plants on light soils suffered with me last winter. Those on heavy soils stood well.

Mr. Barry—The winter was a severe one with us for all varieties, new as well as old. The freezing and thawing in the spring produced the greatest injury.

Mr. Hoag—Saw no difference between old and young. Left his vines uncovered as an experiment, and the only ones injured were the Catawbas and Allen's Hybrids.

Mr. Babcock, Lockport—Mentioned a vineyard in his vicinity containing a large number of Ionas and Israellas and a few Adirondacs—all had wintered well considering the season. The Ionas suffered more than the Adirondacs. The low ground vines suffered the most severely.

Mr. Langworthy—The Allen Hybrid and the Adirondac suffered the most with me. Have several other varieties.

Mr. Hooker—My Adirondacs promised well before the hail storm. They and others were badly cut up then.

Mr. Smith—Had been in the habit of covering his vines in winter, but some Delawares and Concords were left open last winter and were not injured: the Israellas suffered some.

Mr. — I do not approve of the practice of covering vines—especially after they commence bearing. It retards the growth the next season.

Mr. Langworthy—If new varieties are covered in the winter they afford no fair test of hardiness.

Mr. Fish—Covered his vines during the winter and they came out well in the spring. The late frosts of spring, however, killed the young buds.

Mr. Barry—Vines lying on the ground in the spring are much more exposed to damage from frost than if raised two or three feet from it.

Mr. Griffith—Advised planters to heel in grapes in the fall and plant in the spring.

Mr. Hooker—Had seen the Delaware, one of the hardy varieties, killed by freezing—probably from immaturity of the wood.

Mr. Hoag—The first year the vines are tender. The second year's growth generally gives them stamina enough to winter through. He mentioned a man in Cincinnati who left five hundred plants uncovered last fall and lost all by freezing. They should be covered the first year. After that they will stand it, unless the winter is remarkably severe.

Mr. Fish—My vines that were staked up did well. Those on the ground had their buds killed by the spring frosts.

H. G. Warner—Will a light covering of earth keep vines through the winter?

Mr. Smith—I have no doubt but it will.

Mr. Barry—There is nothing strange in the case of the buds mentioned by Mr. Fish. Had the vines been elevated a foot or two from the ground the buds would not have been killed. Messrs. Langworthy and Griffith coincided in this view.

Mr. Moody—Vines grew later last season than usual, hence the wood was tender. In September some vines made more wood than during any other month. Of course the portion just made must have been tender when winter set in.

Mr. Griffith—The severity of winter pruning, in some instances, might affect the ability of the vines to withstand the test of winter.

4th. What grapes have been preserved most successfully during the past winter?

Mr. Langworthy—Sent a quantity of grapes to New York late last season. They all rotted. Those retained at home followed the same example.

Mr. Barry—That was my experience too.

Mr. Griffith—Gathered his grapes early. Put them, boxed up, in a dry room of a temperature just above freezing. They came out well in the spring—the Diana best; the Delaware second.

H. G. Warner—Had been highly successful in keeping grapes. Put up a large quantity last fall in boxes of varying sizes and found the last lot fresh in the cellar that morning. Had Catawbas, Isabellas, Rebeccas and Dianas. They all kept well. Management is all. Grapes should be ripe when picked and kept clean, dry and cold. Had a cellar under a portion of his barn, in which were placed the boxes, containing 5, 12 and 24 lbs. There should not be enough in one box to make weight sufficient

to crush or press hard upon the lower strata of grapes. Pack in lightly and nail the boxes up, and set them one upon the other, as they will thus occupy less room. The temperature of the cellar was about 28 degrees. A temperature that will freeze potatoes, uncovered, will not freeze grapes in boxes. Pine boxes should not be used, as they flavor the grape with their own aroma. Some few of the grapes decayed, but nearly all were preserved fresh and good. The Isabellas and Concords were among the last used, and they were fresh and palatable. No other covering but the boxes were used.

Mr. Babcock, Lockport—Kept his grapes well till May. They were boxed up with sawdust and shavings intermixed, and put in a cool cellar. The stems were as green as when put up in the fall.

5th. Is a rich soil necessary for the production of good grapes?

Mr. Smith—Very rich soils are not necessary for the production of the grape. Moderately strong soils were the best and should be as uniform as possible, that the grape may ripen evenly.

Mr. Downing—Rich soils produced a large grape. They look well and market well, but are not so good to eat or keep.

Mr. Farley—A moderately rich soil is the best adapted to most varieties. The Delaware requires a stronger soil than any other variety.

Mr. Hoag—Had not manured his vineyard for seven years, with the exception of a small shovelful to a vine, twice in that time. The richer the ground the more prolonged will be the ripening.

Mr. Moody—The quality of the soil is an essential consideration in grape growing. That of a clay texture suited him the best. Would not care if it would make brick, were it not for the difficulty of working it. To produce fine, early grapes, a stiff soil is essential, both as to appearance and flavor.

Mr. Griffith—A rich soil is not essential. Whatever causes an excessive growth of wood decreases the quantity of fruit. An alluvial soil which will produce about thirty bushels of corn to the acre is rich enough for most kinds of grapes. The Delaware will bear one a little stronger.

6th. Have there been any recent experiments made for the prevention of mildew on hardy grapes?

Mr. Herendeen—Saw in Washington 100 vines in the Government experimental grounds. They were trellised up and a roof two feet wide put over them. This, it was stated, was an ample protection against mildew. It was thought that a single board would do of even less width than this.

Mr. Babcock—Thought mildew generally resulted from a too close planting of the vines. When crowded together, dampness is longer retained, because the air cannot circulate freely among the leaves.

Mr. Moody—Unleached ashes, sown two or three times broadcast, will prove beneficial, as it prevents the rising of the fungus to the vines. Vines trained on high, open trellises were not so liable to mildew as when trained lower and more compactly.

Mr. Langworthy—Have used ashes for years, but do not think they will prevent mildew. Sulphur will do it, undoubtedly.

Horticultural Operations

FOR AUGUST.

FRUIT DEPARTMENT.

THE greater part of July was exceedingly dry and warm, but refreshing and abundant showers towards the close of the month have given unusual vigor to all kinds of vegetation.

GRAPE VINES in the greenhouse will now have their crop well colored and nearly ripe; give air now more abundantly in good weather, and discontinue damping the house so much as heretofore. Look after the laterals, and keep them stopped as they require it. Vines in cold houses are now passing that critical period when they are liable to mildew, unless carefully attended to. If there are any signs of the disease immediately dust the floor with sulphur, and air cautiously. If the bunches are too crowded with berries, now is a good time to thin them out, and also to tie up the heavy shoulders. Stop the laterals when they require it. Vines in the open air may now be pruned of such superfluous branches as would have to be cut away at the winter pruning; care should be taken however not to expose the fruit to the sun.

STRAWBERRY BEDS may be planted the latter part of the month, or as soon as the weather is cooler. Prepare the ground at once, if not already done, by heavy manuring, and digging 15 inches deep. Young runners now laid into pots, and planted in September, will bear a good crop next year. They will also answer for forcing. Where plants are cultivated in rows, the straggling runners should be cut off from time to time.

RASPBERRIES should have the old stems and superfluous shoots cut away.

SUMMER PRUNING should be continued all the month, cutting away the laterals to two or four eyes, and shortening any second growths which may have been made from previous pinchings.

FRUIT should be thinned now, and trees intended to produce large specimens watered with liquid manure.

ORCHARD-HOUSE trees should be kept well watered until they have made a good growth; pinch in long shoots so as to get compact trees.

FLOWER DEPARTMENT.

Everything is now in vigorous growth, though some plants were checked by the hot weather of last month. After the heavy rains the ground should be stirred often, which is more beneficial than frequent watering. Attend now to the collection of soils for use during the winter, and if the houses or flues are not in good order, now is the best time to repair them, before the season is too far advanced.

CAMELIAS, now placed in a proper place in the open air, should be freely syringed in warm weather. Now is a good time to repot all such plants as require it. Grafting and inarching may be done now with success. Young stock do best in frames, shaded from the hot sun.

AZALEAS, now having completed their growth and set their flower buds, may be removed to the open air, in a half-shady place, syringing them freely, and occasionally watering with liquid manure. Repot such plants as require it.

PELARGONIUMS will now have passed their flowering, and should soon be headed in, nearly to the old wood, and afterwards kept rather dry, until the buds begin to break. The cuttings may be put into a cold frame, or under a hand glass, in a cool place.

CINERARIAS AND CALCEOLARIAS should now be planted for next spring stock.

CHRYSANTHEMUMS should be repotted, if not already done, and have frequent waterings with liquid manure.

CALLAS may be repotted this month.

OXALIS may now be repotted.

CHINESE PRIMROSES should be shaken out of the old soil, and repotted in fresh, light, rich compost. Keep in a close frame for a few days; afterwards remove to a cold frame.

MIGNONETTE, for winter flowering, should now be planted in pots.

FUCHSIAS should have abundant waterings with liquid manure.

JAPAN LILIES, done flowering, should be removed to the open air, and receive less water.

CACTUSES should now be repotted in good soil, and be freely watered.

VERBENAS, for winter blooming, should be placed in a cool frame, where they can be protected from heavy rains. Pinch off the flowers as they appear.

CYCLAMENS, planted out, should have occasional waterings, as they begin to grow.

CUTTINGS of various bedding plants, for a spring stock, may be put in the last of the month.

FLOWER GARDEN AND SHRUBBERY.

The lawn will now be in the finest condition, and recent showers will give it additional verdure. Roll often, and cut close. Hoe, rake and roll the walks, and keep all dug beds perfectly clean, and free from weeds.

CARNATIONS AND PICOTEES should be layered this month.

DAHLIAS should be tied up, and all superfluous laterals cut away.

NEAPOLITAN VIOLETS should be watered if the weather is dry.

ROSES should be layered immediately.

WHITE LILIES should be taken up the last of the month.

GLADIOLUS should be tied up to neat stakes.

ASTERS should be watered with liquid manure, to obtain fine large flowers.

PERENNIAL PLANTS of many kinds, which flowered early, may be taken up, divided and reset this month.

PINKS should be propagated by layers or cuttings.

PANSY SEEDS, for early spring flower, may be sown this month.

THE MASSACHUSETTS HORTICULTURAL SOCIETY.

THE best evidence of an increasing taste for horticulture and rural art, is the establishment of horticultural societies throughout the country, in states, in counties, in cities and in towns. Individual effort and example have exercised the happiest influence in fostering a love for plants, diffusing a taste for gardening, and elevating the science of cultivation; but it is only when the active coöperation of all these influences are brought into force through the aid of systematic organization, that the greatest results are achieved. The establishment of the Horticultural Society of London, in 1806, was the period from which may be dated the rapid advancement of cultivation in Great Britain; and the formation of the Massachusetts Horticultural Society, in 1829, was a similar epoch in the progress of horticulture in our own country.

Through the former a new impetus was given to the introduction of new plants from every quarter of the globe; increased attention was directed to the production of new fruits, flowers and plants; a higher standard of culture was established, and by the constant accession of knowledge and the continued exhibition of the best specimens of the gardeners' skill, a state of perfection has been reached, of which few at that period could have dreamed. New associations sprang up throughout the country, zealous and enterprising cultivators spared no pains to show how inexhaustible were the objects which would add to the ornamentation of the garden, the orchard or the greenhouse. All that was needed was the sympathy and encouragement of the societies organized for that object. This for a time was sparingly given, but as it became evident that the results were of the highest importance to the progress of horticultural art, this encouragement continued to increase until it has brought almost to perfection the science of cultivation.

Similar results have followed the organization of the Massachusetts Horticultural Society, though not so rapidly,

nor quite yet to the same perfection. Various causes have prevented that concentration of effort, and the prevailing taste is not so general nor the standard so high. This could not be expected in a country still absorbed in material resources. Yet for the time immense results have been achieved, and it only needs the same liberal encouragement inaugurated abroad, to fall little if anything short of the condition of horticulture in Europe.

We speak of the Massachusetts Horticultural Society, and in doing so we do not intend as singling this out as the only association; for there are others which have done, and are doing, immense good in our neighboring cities. But we allude to the former, because, through a combination of fortunate circumstances, it has the means to do so much more than any other society. A society, without any available means except the annual contributions of its members, may accomplish much good; but if, in addition to these, it can draw from an accumulating fund, it possesses the power to offer the highest encouragement to our cultivators. That it has done this we have the best evidence, and we have no doubt it will continue to do so. While it has, as every society should, husbanded its resources for the object it has now accomplished, it has never contracted its means, but has yearly augmented and extended its prizes.

From the reports and addresses which have appeared in our pages may have been learned what the Society has done for the encouragement of horticulture. In 1845 the prize list amounted to \$1500, and in 1865 to \$3000. Thus in 20 years the average sum it has yearly awarded in prizes, besides numerous silver medals, valuable pieces of plate, &c., has exceeded \$2500, or an aggregate amount of FIFTY THOUSAND dollars. Are there many similar associations which have done more to encourage horticulture?

The condition of the Society may be called fortunate; but those who look deeper into its history, can see that much if not most of its success has been owing to the zeal and enthusiasm of its founders, and their devotion to a science, of which they had a thorough knowledge, practically and theoretically. Hence they inspired confidence in its objects and purposes, and enlisted hearty friends in the cause.

They were not working for selfish objects and personal aggrandizement, but with all the energy of earnest men for the embellishment of our houses, the introduction of the richest fruits, the cultivation of the most beautiful flowers, and the welfare and comfort of the whole people.

The erection and final completion of the Society's new Hall is an event which we cannot allow to pass without these few remarks. Officially connected with the Society and its progress for four years, we yet may allude to that in which we, with the whole Society, are the participators, without any reference to personal acts.

The crowning glory and beauty of the Society's Hall are the noble statues which have been placed in their appropriate places on its Tremont Street façade. These statues are Ceres, Flora and Pomona, the presiding goddesses of all cultivation. They are cut in the hard and enduring material of the finest white granite, and in their design, execution and finish, reflect the highest credit upon the young artist who was entrusted with the work. The building is, we believe, the only one in the country which has been enriched by statuary of a similar character. It stands prominent among the buildings of Boston, in its architectural proportions, its unity of design, and its general expression of beauty as typified in the solid material of which it is constructed. A much larger sum at the disposal of the Society might have enabled it to erect a structure in the style of the highly decorated Parisian buildings; but this was not possible, nor do we believe desirable. The building, as it is, reflects the highest credit upon the Society, and is an honor to our city. The cost of the building was \$150,000, exclusive of the land, and of the building and land, \$250,000. The cost of the three statues was \$20,000.

These statues have been generously given to the Society by three of its most active and honored members. Ceres by B. P. Cheney, Flora by H. Hollis Hunnewell, and Pomona by C. O. Whitmore. The Society owes a debt of gratitude to these gentlemen, for these as well as other munificent acts, and we are glad to record the following report by Turner Sargent, Esq., one of the Committee appointed to procure the

statues, which was read at a late meeting, and unanimously accepted:—

On the 4th of February, 1865, H. H. Hunnewell, C. O. Whitmore, B. P. Cheney and Turner Sargent were constituted a Committee for receiving donations, and placing upon the north and south corner buttresses of the first story of the Tremont Street façade of the Society's new building, and also upon the centre crowning tablet of said façade, three statues, and were authorized to cause the same to be erected.

The spontaneous and noble generosity of his three associates, who have respectively presented to the Society "Flora," "Pomona" and "Ceres," leaves the Chairman but the simple duty of reporting, that there now stand upon the Society's new building, three colossal statues, one representing the Goddess of Flowers, one the Goddess of Fruits, and one the Goddess of Grain.

They are symbolical and typical, and being such it is thought that they are peculiarly appropriate, not only to the architecture of the building itself, but to the principles by which the Society is actuated, and by which it lives and flourishes. In one sense the Society dispenses the beautiful, as is manifested in the flowers that decorate its halls, in the fruits that gladden the eye, and in the grain that cheers the heart, it is therefore that these statues, standing as they do, boldly and bravely out in the sunshine and in the stone, show to the passer by the object and the aim of the Society, and make manifest its great intention.

As it is inappropriate to descant upon the heroic beauty of the Cyclopic Ceres, the playful gracefulness of the "Flora," or the matronly dignity of the "Pomona," the simple fact only will be alluded to that a few months since, the mighty boulder, that had been sleeping amidst the granite hills of New Hampshire since the creation of the world, was touched by the Ithuriel spear of art, and developed into these embodiments of the good, the useful and the beautiful.

For this we are indebted to the gifted young artist (Martin Milmore) whose name is cut at the feet of the statues, indicative of his veneration for art, and for his adoration of its mighty power.

It is not irrelevant here to state, that much care and much thought have been bestowed during the progress and completion of these statues, on their design, and their adaptability, and if the gratification of the eye touches some latent emotion of the heart of any gazer, however careless or however humble, and leads the thoughts upwards to the Great Creator, who guards the lily and protects the grain, then these silent architectural interpretations will not have been presented or erected in vain.

It is unnecessary that we should add one word of eulogy, or extend our remarks in reference to these beautiful and, we may add, remarkable works of art.

The last portion of the work of the erection of the Hall, entrusted to the Building Committee, covering nearly four years, has just been completed. This has been the addition of two tablets, placed upon the walls of the rotunda on either side of the main entrance to the Hall. The tablets are of marble, with gilt letters. The one on the right reads as follows:—

DEDICATED SEPTEMBER 16, 1865.

BUILDING COMMITTEE.

C. M. Hovey,	H. H. Hunnewell,	M. P. Wilder,
C. O. Whitmore,	Josiah Stickney,	L. Wetherell,
J. F. C. Hyde,	Wm. R. Austin,	Jos. S. Cabot.

COMMITTEE FOR PROCURING STATUES.

Turner Sargent,	C. O. Whitmore,	H. H. Hunnewell,
	B. P. Cheney.	

ARCHITECTS.

G. J. F. Bryant, Arthur Gilman.

On the left-hand side:—

To this Society
the community is indebted for
Mount Auburn Cemetery,
whose foundation and consecration was
one of its earliest acts, and in
whose improvement, enlargement and embellishment,
it has a perpetual interest.

Let us hope that the refining influences of horticulture will extend throughout our entire country, and that our sister associations may kindle the same spirit, and find liberal friends, who will be stimulated by the same ardor which has contributed so much to the welfare, prosperity and future usefulness of the Massachusetts Horticultural Society.

FRUIT CULTURE IN ORCHARD-HOUSES.

BY THOS. RIVERS, SAWBRIDGEWORTH, ENGLAND.

AMONG the many interesting and valuable papers, read before the late Horticultural and Botanical Congress in London, was one by Mr. Rivers, the well-known nurseryman, entitled "the Culture of Fruit in Unheated Glass Structures," but which we call orchard-houses—for when not heated they are truly such—a brief and distinctive name, and one we much prefer to "unheated glass structures." This is the opinion we have always expressed, in regard to houses without heat, for with it they are simply forcing fruit-houses, and in no way differ from the peachery, or vinery, well-known terms, only so far as they may be devoted to what are usually known as orchard-fruits.

This paper of Mr. Rivers is an account of his experience in growing fruit in unheated glass structures, both in pots and in the ground, and, like his previous communications, is full of sound practical hints, and general information, which will be of essential service to all who desire to cultivate fruits in a similar way.

We need not go much into detail; but we may allude to two things which he discusses, viz.: The soil for the peach, and the high estimate given by Mr. Rivers to our American apples. Our cultivators have generally thought the soil could not be too light for the peach, but Mr. Rivers deems it a *sine quâ non*, that it must be firm, compact and good; and as to our native apples, Mr. Rivers says they are almost as melting as a peach,—which we know is quite different from the English varieties.

In a climate where the plum and pear are frequently injured when in bloom, as they are in Great Britain, orchard-houses will be a great boon, but in our own country, where these fruits rarely fail, though not so highly essential, they will form pretty episodes of culture, and from the beauty of the trees, and superiority of the fruit, will merit and receive the attention of enthusiastic and intelligent amateurs. Nothing could better show the importance of orchard-houses for the peach and apricot than the experience of the present year; for the market is entirely bare of this fruit, unless of such inferior quality that few who love a real peach would care to eat; yet we have seen magnificent specimens gathered from trees in pots, from the gardens of our enthusiastic amateurs, who have enjoyed the luxury of delicious peaches. To those who are about to embark in the enterprise Mr. Rivers's advice will be most welcome:—

As much experience has, within these few years, been acquired with respect to the most approved mode of erecting and planting orchard-houses, I will endeavor to record some of the lessons that experience has taught.

With respect to the form of a glass structure to be called an orchard-house, a term at first broached with diffidence, but now imbedded in our language, the span-roofed is most undoubtedly to be preferred. The width and height are of course a matter of taste, but the dimensions the most approved of are a width of 24 feet, height at sides 6 feet, height to apex of roof 15 feet; a house of this width is on the whole to be preferred to one of wider dimensions, only because it can be so thoroughly ventilated by side ventilators; still, increasing this to a width of 30 feet is not objectionable.

Houses of the above dimensions are adapted to large gardens, but smaller span-roofed houses are equally efficient, and capable of giving much pleasure and produce to the amateur cultivator of more limited means. A house 14 feet wide, 5½ feet in height at the sides, and 12 feet to the apex of the roof, is less costly, and nearly as well adapted to the cultivation of fruit; I say nearly only, because such houses do not possess perfect immunity from the severe frosts which often occur in

England in the month of April, when the trees are in bloom, and sometimes require a pan of ignited charcoal to enable them to resist frost, while large houses retain such a large body of heated air, that frost in spring, to any injurious extent, seldom or never enters.

The striking peculiarity of these orchard-houses is their construction. The ancient and expensive form of building houses for the cultivation of fruit, viz., by sliding sashes and heavy rafters, is entirely departed from; they are built with fixed unbroken roofs; none of the useless and expensive methods of roof ventilation are resorted to; no pulling down of sashes "to give air" is necessary; the most thorough ventilation is given by the admission of air at the sides at a low level.

In a large house, 24 to 30 feet wide, and 6 feet in height at the sides, 2 feet in the centre of each side should be a shutter, either glazed or of wood, 2 feet below it either of boards or brickwork, and 2 feet above it of glass. The 2-foot openings on each side admit large volumes of cool air, which, when the sun shines, is rarified, and rapidly ascends to the roof, through the foliage of the trees, and makes its escape at a triangular aperture under the gable at each end; these apertures, in houses of the size above mentioned, should be 18 inches in depth. After years of experience, this simple mode of ventilation is found to be efficient. For span-roofed houses, 14 feet wide and 5½ feet high at the sides, a ventilating space 15 inches wide will be found amply sufficient, and a triangular aperture at each end, under the gable, 1 foot in depth, will give free egress to the heated air; these apertures are permanent, and left unglazed. In severe spring frosts, when the trees are in bloom, a temporary covering may be used with the houses 14 feet wide; with the larger houses it is never required.

A very recent improvement in the building of orchard-houses has originated here owing to a mistake. The builder had orders to place the rafters of a new house 400 feet long, at the usual distance (20 inches) apart; he placed them 24 inches apart, and as 21-oz. glass has been used, the effect is remarkably good, the admission of light is so abundant. The

pieces of glass are 24 inches by 18 inches placed crosswise; the rafters neatly chamfered, are $4\frac{1}{2}$ inches by $1\frac{1}{2}$.

The most interesting of all fruits to English people are peaches and nectarines, and to these I will first devote some attention.

There are two methods of cultivating these fruits in orchard houses, both equally favorable to their well-doing: one is to cultivate the trees in pots, the other to plant them in the borders of the houses. With the large houses the most eligible form of tree to plant in pots is the pyramidal: this most interesting form succeeds better in pots than when planted in the borders; the roots being confined, the shoots are not so gross as those on trees planted in the ground, the sap does not rush to the top so rapidly, leaving the lower branches in a weakly state; in fact, it seems more regularly distributed, so that for many years, a pyramidal peach or nectarine tree, in a pot from 15 to 18 inches in diameter, gradually increases in beauty, and by the simple operation of pinching all the young shoots formed during the summer, to two, three, or four leaves, a fruitful and beautiful pyramid, 10 feet or more in height, may be formed. Such trees, placed among others planted in the borders, are most ornamental, showing, as they will do if attended to, perfect cultivation. The health and fertility of such trees is kept up by giving them every season some fresh food in the shape of a rich compost formed of loam (if tenaceous all the better) and manure, thoroughly decomposed, in equal quantities. This operation should be performed about the last week in October, by removing the surface soil—generally a network of fibrous roots—to a depth of 5 inches, and replacing it with fresh compost of the description just given. The most important matter connected with the culture of trees in pots, is keeping their roots dry during the winter months, so that they are not too much excited—they are never at rest—the shoots then become dry and ripe, and in a fit state to put forth their blossoms in spring, which, owing to the trees not being subjected to the great atmospheric changes incident to the open air in an English winter, they do with great vigor. To make success doubly sure, this dryness in the soil in the

pots must be strictly attended to ; the trees should be well watered when top dressed, and again before the middle of November ; they may then, if in the large pots I have mentioned, remain without water till early in March, when the blossom buds begin to swell. Many failures in the pot culture of fruit trees have occurred from the fears entertained by cultivators that trees must always have their roots in a soil saturated with moisture—the great evil of our English climate, for if the roots of our fruit trees in the open air could be kept from the heavy rains of our winter months, we should have much greater success in the culture of the more delicate kinds of fruits.

Before I leave the subject of pot culture I must mention the necessity of giving the trees extra food during the summer months ; this is best done by placing on the surface of the mould in the pot a layer of some rich compost, about 3 inches in depth at the outside, and made concave round the stem of the tree, so as to retain water. This compost may be manure chopped into small pieces, and saturated with liquid manure, or horse droppings from the roads, and malt or kiln dust from a malt-house, equal quantities, also saturated with liquid manure ; the latter compost is the most valuable surface-dressing ever invented, for not only do the roots of peaches come to the surface to feed upon it, but vines, if dressed with it, show extraordinary vigor. If a vine in a pot has a dressing of it from 6 to 8 inches deep (this must of course be supported by pieces of slate stuck inside the rim,) the roots ascend rapidly, and seem to devour it with avidity, so that by the autumn a mass of this compost on the surface of the soil in the pot, in which a vine has been growing all the summer, will be found a complete mass of fibrous roots, hard and compact, the virtue of the compost being seemingly absorbed.

I have thus far endeavored to give an outline of the pot culture of peaches and nectarines in unheated glass structures. The other method of cultivation by planting the trees in the borders, must next be considered ; this is neither more nor less than planting a peach garden, such as one would do in Italy, or in some of the States of North America—still, as a

glass structure is of more value than a piece of uncovered ground, care must be taken that it is made the best of. There is a peculiar nature in most stone fruits, their love of a firm soil. A light, porous soil is generally fatal to the health of a peach tree, at least in the gardens of Europe; how the light soils of Buenos Ayres and other parts of South America act on the constitution of the peach tree, I am not able to say; I only know from the report that the trees make good firewood.

In orchard-houses, I am now able to assert, with full confidence, that a firm border for peach and nectarine trees is a *sine quâ non*; there is no sound prospect of success without it; and I may add, that if such a border is calcareous, or can be made so by mixing one square yard of chalk to 10 of the natural soil, so much the better for the fruit trees. In forming the borders, the soil should be refreshed with a slight dressing of manure, and then stirred to a depth of 20 inches—no other preparation is required; the trees should be planted in this rather shallow border, be heavily watered, and suffered to remain for a week; at the end of that time the entire border should be gone over with a rammer, and rammed firmly down; a wooden rammer, about half the weight of those used by the London paviors, will be found the best implement.

The border thus rammed and level, should remain solid, and never again be stirred, except being slightly pricked with a fork in spring—early in March—to admit water to the surface roots of the trees. After being watered, a slight dressing of rotten manure, about one inch in depth, should be laid on the surface of the solid soil, and no other disturbance of it should take place. So obnoxious is the disturbance of the soil to the roots of peach and nectarine trees, that I have seen in a house fine and well-grown half-standard trees quite bare of fruit, owing to the borders having been carefully dug 8 inches in depth in spring, every blossom having dropped without setting.

I see no reason why the principles here laid down should not be applicable to all soils and climates in which the cultivation of the trees just mentioned requires the assistance of

glass. I will even go further, and fearlessly assert that their culture, when trained to walls, may be much benefited by solid undisturbed borders.

As far as I have experienced, there are many professional and amateur gardeners, who, although having succeeded in the culture of peaches and nectarines under glass, have yet failed in producing crops of apricots, much to their regret, for of all stone-fruits the apricot, when thoroughly ripened in an orchard-house, and in that state when the skin commences to shrivel, is the finest; so full of delicately-perfumed saccharine juice, so nutritive, and so digestible is it, that no fruit I have ever eaten can compare with it.

How great is the contrast between such fruit and those generally taken from walls, but seldom fully ripe; from those offered for sale on the Continent, and those imported thence; all hard, dry, and unwholesome.

The most curious fact relative to the culture of the apricot in orchard-houses is a recent discovery that they require less care than any other kind of fruit; it is simply the "let-alone" principle, and the avoidance of too much care. Their successful culture in pots, with this proviso, is soon told. Trees of three or four years' growth should be planted in pots 15 or 18 inches in diameter, in a compost of loam and manure; if the loam is not calcareous, the same proportion of chalk (one-tenth) as recommended for peaches and nectarines should be mixed with it. The compost should be rammed down firmly, but not too heavily—the blunt end of a stout stick will do very well. The trees should have no water after the middle of November till early in March, just as the blossom buds are swelling, and then only in small quantities.

As soon as the fruit is set, and about the size of small horse-beans, some rich dressing should be placed on the surface of the soil in the pots, and water given liberally; this treatment is adapted for trees potted in autumn. For trees established in pots, the following simple treatment has been found here perfectly successful. About the first week in November they should have a liberal supply of water; this cannot be given at once, but should be at intervals, say three times during one day; this is the last time of

watering, and it should be done effectually. No top-dressing, as with peaches and nectarines, should take place, but the earth in the pots should be suffered to remain firm and undisturbed. About the first week in March, when the blossom buds begin to swell, the trees may have water, as directed for trees freshly potted; but now comes the peculiar treatment which has here been so successful; the surface of the soil must remain perfectly undisturbed until the fruit is fully set, and about the size of a small horse-bean; then, and not till then, should the tree have fresh food to nourish its crop of fruit—and this is done by carefully scraping off the surface soil to an inch in depth, so as not to injure the roots, and then placing on the surface a dressing of the rich compost named above; this should not be heaped up to the stem, but made concave, so as to retain water. The dressing should be 3 inches deep round the outside of the circle; if the weather be warm, the trees may have water daily, and the fruit will swell rapidly. I must add that this surface-dressing given, say early in May, must be repeated in June, and again in July; for the roots seem, as it were, to feed upon it—at any rate it disappears. If a tree should happen to have an extra full crop, it is a good practice to stick some pieces of slate inside the rim of the pot, so that more food, in the shape of an additional coat of compost, may be given; this is, however, not to be recommended—it is better to thin the fruit more severely, so as not to distress the tree.

The most preferable form of trees to plant in large orchard-houses are standards with stems about 5 feet in height; these may be planted 10 feet apart. For cultivation in pots in such houses, pyramids, in pots 15 to 18 inches in diameter, are to be preferred; they soon make noble trees, and should be placed among the standards wherever an eligible space can be found. For smaller houses, half-standard trees, with stems about 3 feet in height, should be planted in the borders, and bushes—round-headed trees on stems 1 foot in height—cultivated in pots.

These descriptions of trees apply to apricots, peaches, and nectarines.

With reference to the recommendation of a solid, undisturbed soil being so favorable to the apricot, I may mention that some standard trees, standing in one of my houses in a stiff calcareous clay—the soil as hard as a well-trodden path—bear so abundantly that unless the fruit is thinned severely they would destroy themselves. There is nothing new in this liking of the apricot tree for a solid unbroken soil, although it was discovered here by mere accident, viz., by some trees in pots being forgotten, and having no water or care till the fruit was set. It is, however, simply an old fact with a new face; for, since it has been practised here with trees under glass, I have recollected seeing in many of the cottage yards in Oxfordshire and elsewhere apricot trees trained to the gable ends of cottages, flourishing and bearing most profusely, their roots being in some yards under a pavement, and in others under the common footpath of the family. It should never be forgotten by the cultivator that apricot trees in orchard-houses require abundance of air while in bloom, and that they will bear 3° or 4° of frost with impunity, while one night of confined moist air will make the blossoms drop without setting their fruit.

With respect to the construction of houses for the cultivation of cherry trees, the small span-roofed house, 14 feet wide, will be found the most eligible, for one special reason—the cherry aphid can only be effectually kept under by tobacco smoke, and this can never be made sufficiently dense in large houses. The most eligible form of tree, either for planting in the borders or for pot culture, is the pyramidal. Some care is required in selecting the sorts, and the kind of stocks the trees are grafted on; the most compact-growing race, and that best adapted for the borders, is the May Duke. The following varieties of this class, Empress Eugénie, May Duke, Archduke, and Duchesse de Palluau, all form beautiful and fertile pyramids, easily kept in order by constantly pinching in the young shoots to three leaves during the summer. These kinds of cherries require to be grafted on the *Cerasus Mahaleb*, which induces a dwarf compact habit.

The finer kinds of Bigarreau cherries, which, when grafted on the common cherry (*Cerasus sylvestris*), become, in

orchards, such large trees, should be cultivated in pots, from 15 to 18 inches in diameter; and if their young shoots are pinched in to three leaves during the summer, they form most beautiful pyramids. If trees of this race are planted in the borders, their tendency to luxuriant growth must be checked by double grafting; this is done by budding or grafting some kinds of Duke or Morello cherry on the Mahaleb cherry, and then regrafting it with the kind of Bigarreau or Heart cherry wished for; they soon form, when subjected to the summer pinching of their shoots as directed above, most fertile and beautiful trees; indeed, I know of no fruit trees more beautiful and desirable than pyramidal cherries. When cultivated under glass, their fruit is brought to such perfection of ripeness as is seldom or never seen in the open air, at least, in England; besides this, its duration is so great, for the early kinds ripen the first week in June, and the late varieties continue in perfection till the end of August.

There are still a few kinds of fruit worthy of a passing notice, as being adapted to orchard-house culture. Among these the finer kinds of dessert plums deserve attention. It is well known how liable to injury the blossoms of the plum tree are from spring frosts, not only in England, but over a large portion of the Continent. By cultivating the trees, either as pyramids or half-standards, in orchard-houses, their blossoms set freely, and they bear abundantly. In the warmer parts of England the trees should be removed to some warm sheltered place in the open air to ripen their fruit, the flavor of which is then more racy; but in cool moist climates they may remain under glass, if the house is allowed to have abundance of air night and day till the fruit is ripe; the trees may then be placed out of doors till the commencement of November, and then be removed to the orchard-house, or their roots become too much saturated with the heavy autumnal rains.

Pear trees, of which we so often lose our crops by frost destroying their blossoms, may be subjected to exactly the same treatment as plums. Pear trees grafted on quince stocks are to be preferred for this mode of cultivation—they are so enormously fertile. The pyramidal form is most to be

recommended for pear trees, and the pinching in of the young shoots in summer, as directed for cherries, is quite indispensable.

Knowing, as we all do, the hardy nature of the apple, it seems almost an extravagant idea to recommend it as a tree to be cultivated under glass. Unless I had had experience, I should participate in this opinion; but after seeing and tasting the magnificent apples I have gathered from trees in my apple-tree house, I can safely say that the difference between a Golden Pippin of the old sort ripened on trees in my house, and those from trees in the open air, both in size, beauty, and flavor, can scarcely be realized; and the melting, juicy texture of some of the finer kinds of American apples, such as the Melon apple, the Northern Spy, the Primate, the Washington, and some others, is equally remarkable; the latter-named sort ripens in September, and when fully ripe its juice is nearly as abundant as that of the peach, running down the knife when cut.

I have in this slight sketch endeavored to give an idea of what may be done in temperate climates, in fruit culture under glass without artificial heat; and although some 16 years have passed since its advantages were shadowed forth, I can, with the most perfect confidence, say that it is still not only in its childhood, but in its babyhood. I feel, however, no hesitation in prophesying that, ere this century closes, orchard-houses will be as familiar to the eyes of Englishmen as the green fields, and that they will spread over all the temperate regions of the United States of America, where they are already numerous. With regard to the Continent of Europe, they will move more slowly; but as wealth and intelligence increase, they will to a surety be things well-known and highly prized, more particularly in Sweden, Norway, and the north of Europe generally.

Mr. Rivers has another article, in continuation of the same subject, which we shall endeavor to find room for in another number.

POMOLOGICAL GOSSIP.

STRAWBERRIES.—We have been somewhat surprised at the comments of different cultivators upon the new as well as old strawberries. One writer describes a large number of what he thinks the best, only one of which is cultivated to any extent for the Boston market, and leaves out any account of the Brighton Pine, Jenny Lind, Boston Pine, and Hovey's Seedling, the three most profitable strawberries for market. The strawberry is certainly the most variable of all fruit, or its successful culture is not understood, that cultivators should differ so greatly in their opinion. Except for mere variety, which we like ourselves, and which nearly every amateur desires, the whole catalogue of strawberries might be cut down to six or eight. Mr. Saul of Washington settles down on the Wilson, Hovey and Filmore, of the American varieties.

PROFITABLE STRAWBERRY CROP.—We have heard so much of the extraordinary profit of the Wilson, Triomphe de Gand, Jucunda, and other strawberries, that we give the result of a small plantation of one acre and one rood of Hovey's Seedling, grown by Mr. Patterson of Belmont, this year, the net proceeds of which were \$1800. Mr. Patterson is one of the best cultivators, and this result shows that he knows how to raise good strawberries. Can our friend Mr. Knox come up to this?

THE RIPPAWAM STRAWBERRY.—This new variety was introduced last year as larger and better than the Agriculturist. We notice that it took the prize in New York in competition with the latter, and is announced as larger, more productive, better and handsomer than that sort; all of which there is abundant room for. Our own plants did not bear, but the vines look vigorous and grow well; another year will be required to test it in our grounds.

NEW STRAWBERRIES.—We noticed in our last number several new seedlings. Mr. Keach of Waterloo, N. Y., has named his four seedlings, Gen. Grant, Gen. Sherman, Gen. Meade, and Phil Sheridan; all first-rate, the last the "best

quality of flavor of any berry in the United States." The Stinger Seedling, originated by W. H. Stinger, Gray's Ferry, Philadelphia, from the Triomphe de Gand, stands the winter well, strong grower, abundant bearer, brilliant scarlet, and a No. 1 berry for either the market garden or the amateur. Ida is the name of a variety introduced by W. S. Carpenter of New York, astonishingly productive, remarkable vigor, large fruit, dark scarlet, fine flavor. Golden Queen is another seedling of monstrous size, six inches in circumference, and very productive; and the Metcalf Seedling, from the West, is said to be early, productive and fine. These are but a part of the new kinds offered this autumn.

NEW METHOD OF PROPAGATING VINES.—Mr. Perry of Canandaigua, N. Y., has patented a new method of propagating grape vines. It consists in laying the vines in boxes with vertical partitions, so that they can be transferred to the ground without in the least destroying the roots. How far it is an improvement, or whether valuable, remains to be seen. Our opinion is that vines from cuttings are so much preferable to layers that they should not be propagated by layers unless to increase some new sort.

THE PEAR CROP.—The pear seems to be the only reliable fruit. So far as we can learn, the crop of apples in Massachusetts will be small; peaches there are none; plums but few; but the pear, though not perhaps so abundant as in some years, falls very little below the average. Judging from our own trees, the fruit will be larger and better than in either of the last two dry years. Certainly the pear has not failed to produce liberally the last four years, while the apple, which has had the reputation of being the most reliable crop, produced little or nothing in 1864 and 1865, and it appears but little better this year. Grapes, we should have said, look well so far, and if the autumn is favorable the crop will be good. In the West, Dr. Warder says, the only promising crop is the grape.

DOWNING'S MULBERRY.—We have heard very little of this fruit of late. A few very good specimens were exhibited before the Massachusetts Horticultural Society recently, the produce of a tree only five or six years old. Our impression

has been that the tree was not quite hardy enough for our climate, and we shall be glad to learn that it has generally withstood the severity of our winters, and may be reckoned among our hardy fruits. Though not so large as the old English Black, it is a good flavored fruit.

STRAWBERRY CULTURE, AS VIEWED IN ST. LOUIS.—Mr. Jordan of St. Louis, Mo., made a trip East the past June, and made the following Report on Strawberries to the St. Louis Horticultural Society:—In the first place I must say that what we have heard about “clean culture” is all a myth; and I saw none of it where I went; as far as I saw the culture was not cleaner, if so good as some here in the West. He believed that western men could now locate among them, raising fruits for the New York market, and successfully compete with them. At Pittsburgh visited the place of Mr. Knox, saw all his varieties of strawberries, then in the midst of the season. Did not see anything desirable in the new varieties. The Wilson here, as everywhere else, is the most prolific, profitable and popular variety for market. The Agriculturist has not sustained its reputation anywhere. The Jucunda is valuable only as a late variety. I saw it at Mr. Knox’s, and when carefully cultivated in hills had a heavy crop, but when left to run to produce new plants, its bearing qualities ranked low.

SELLING AND KEEPING GRAPES.—A dealer in the New York market gives the following good advice, which applies to pears as well as grapes:—There is one point in regard to the selling of grapes in our market that many growers do not understand, and I will endeavor to explain it. It is a prevailing opinion among growers that the later they can keep their grapes the more money they will get for them. This is incorrect in a great degree. During the height of the grape season, we have a large number of dealers in the poorer qualities who sell in the streets from wagons and baskets, at a few cents per pound. As the season advances these dealers all quit the business, also all the cheap growers who have been dealing in them. Even some of our best growers tire of them. At least 90 per cent. of all who have been dealing in them retire from the business, leaving only a few of the first

class fruit-dealers in the trade; and in order to sell to these the fruit must be very choice. This accounts for a poor article of grapes not selling late in the season, and I would advise every farmer who lives at a distance from the market, and has a crop of poor grapes, to sell them to the wine makers, or, if none are near, make them up into vinegar, which is always in demand.

A very choice article of Catawbas will sell until the holidays, when the entire trade falls off until March or April, when there is a slight demand for it, if strictly fine. During the months of January and February it is almost impossible to sell a pound of grapes. I presume the cause of it is, that people have not been accustomed to seeing them in the market, and consequently think they cannot procure them. This idea will soon disappear, and the people be taught that they can procure them in winter as well as in the fall; for, with the aid of fruit-houses, we will be able to keep grapes. I have kept some in my store until the middle of April, and exercised no more care with them than I should with a barrel of apples. The main idea is to keep them dry and cold.

GROWING GRAPES AND JUDGING OF THEIR MERITS.—The same writer gives the following sensible advice, in reference to growing and judging grapes, which we copy from the Rural New Yorker:—I am aware that it is a general idea that the grape can be grown almost anywhere in this country; so it can, but not to such a degree of perfection that it will be sought for by lovers of this fruit for their tables. Many of our grape growers never taste any but those grown in their immediate vicinity, and of course are not competent to judge correctly of their quality, while those who reside in large cities have them from all parts of the country, and can compare and judge of their respective value and merits. Those which are superior will meet with success, and those which are poor will be condemned. In speaking of those living in large cities I do not refer to Agricultural Clubs who meet to prove everything they have to sell, and condemn everything they have not, but the *people* in the broad sense of the word—those who appreciate a good article, call it by what name you please.

HYBRID RASPBERRIES.—Mr. C. Arnold of Paris, Canada, has succeeded in raising seedlings from the White Cap (Thimbleberry) and the Belle de Fontenay raspberry. The first cross was inferior, but again fertilizing these seedlings with the Belle de Fontenay and White Merveille de Four Seasons, he succeeded in obtaining plants which are enormously productive, perfectly hardy, and almost ever-bearing. If Mr. Arnold has, as there appears little doubt, obtained a real cross between the kinds he names, he may yet secure a class of perfectly hardy and valuable varieties. The experiment is worthy of trial.

C A N N A N I G R I C A N S .

BY THE EDITOR.

THE Cannas must be considered the most valuable of our summer-growing ornamental foliaged plants. If they have not the diversified colors of the Coleus or the Begonia, or even the gigantic foliage of the Wigandia, they are so stately in aspect, so varied in the form and tinting of their leaves, and so dissimilar in the color and size of flowers, that they will ever hold a high rank; but if to these qualities we add those which are all-important, rapidity of growth, ease of culture, and capacity of withstanding the most ordinary treatment during winter, they must claim the position we have accorded them as the most valuable among the many decorative garden plants. Three or four large groups of several kinds, among them some that are quite new, have been a source of the highest gratification for several weeks, and though yet only half the size they will attain by September, they form grand objects, and a mass of varied foliage, and varied blossoms. A group of bedding plants, of whatever kind, can bear no comparison with the noble aspect of these Cannas. The bedding plants may be beautiful in an appropriate parterre, but upon the lawn, in the neighborhood of fine trees and shrubs, and surrounded with palms and yuccas, and similar vegetation, they are out of place, and

cannot give that aspect of rich vegetation which belong to the ornamental leaved plants.

Upwards of forty species and varieties are enumerated in some of the Belgian Catalogues, but we have not cultivated above a dozen or so of them, all of which are good, but some far preferable to others. *C. Warscewiczii* is an old kind, but it is still one of the best, with its bronze foliage and crimson scarlet flowers. *C. nepalensis* has smaller green foliage, but



13. *CANNA NIGRICANS.*

the flowers are almost equal to some of the *Gladiolus*. *C. Annei* is another green-leaved sort, but of stately growth, and elegantly shaped leaves. *C. zebrina* is somewhat like *Warscewiczii*, but better, and *C. gigantea* has huge stems and leaves, three feet long, beautifully shaded with bronze, and neatly ribbed. One of the latest additions is the *C. nigricans*, (FIG. 13,) which excels in the rich tints of its stem and leaves

either of the others, reminding us of the rich coloring of some of the *Dracenas* and *Marantas*, having that bronzy metallic lustre peculiar to many of the tropical ornamental leaved plants. Its growth is rapid, its aspect stately, attaining the height of six or eight feet, and stands in the centre of a group entirely unique and distinct from any of the others we have named.

To produce the best effect the tall growing sorts should be planted in the middle of the bed, and the dwarfer towards the edge, so as to form a kind of pyramidal cone. *C. Annei* or *C. gigantea* would do for the centre of one group, and *C. nigricans* for another, surrounding them with *C. zebrina*, or *Warscewiczii*. We commend all these *Cannas* to the lovers of rich and magnificent foliage.

General Notices.

PINEAPPLES IN THE OPEN AIR.—Pineapples are grown in the open air at Bicton, from May until October, and ripen fine regularly every year. They are put out in May, just after flowering has taken place. The pots are placed in the bottom of a deeply sunk trench; each pot is set on three bricks, and has a bed of leaf mould below it into which the pines root. The trench affords perfect shelter, and the spot is surrounded by a high thick hedge, at a little distance, which of course tends to make all snug and very warm. Pines thus situated stand a good deal more frost than some bedding-plants would do. Pelargoniums get touched while the pines are uninjured. They are about eighteen months old when put out. Of last year's batch six perfectly ripe fruit were shown at the Royal Botanic Society's exhibition, early in July, each weighing from three to four pounds, and larger fruit were ripened later in the season. Six Queens were cut last October, weighing together twenty-six pounds. The practice is, therefore, far from being so fanciful as some might imagine.—(*Gard. Chron.*) There is nothing new in this; the French grow the pineapple extensively for market in the open air, and in our warmer climate they may be successfully raised in this way.—ED.

MUSHROOMS.—These may be easily grown without all the exactness often laid down in books. Mr. Barnes of Bicton makes his beds with manure almost fresh from the stables, mixed with about half garden earth. They are generally ready to use at once, and there are abundance of mush-

rooms all the year round. The beds are made on the floors of sheds, the stable dung and soil being wheeled in fresh, and with it a quantity of soil; the earth and droppings are thoroughly intermixed and then well pressed. If, in five or six days, the bed shows any tendency to become "too strong," it is again shaken up, a little more soil added, and the whole rammed firmly into position again. There is no chance of such beds burning or becoming too moist. They bear mushrooms of the finest and heaviest kind, and continue to do so for many months. After the beds have been some time in bearing, and are beginning to get dry, they are watered with clear weak liquid manure water, made only from sheep, deer, or cow dung; no chimney soot or lime is used for the purpose.—(*Gard. Chron.*)

EUCCHARIS GRANDIFLORA.—The large plants exhibited at the International Exhibition, on the 22d of May last, by James Brand, Esq., Bedford Hill House, are now throwing up a greater number of flower spikes than when shown, and will be in full flower in the course of ten or twelve days. The removal from the stove temperature has caused them to be nearly three weeks later than they would have been, for a small plant which always flowered at the same time, and has not been removed, is now in full flower. They are supplied with the contents of a couple of large watering pots of clear liquid manure every other day, and are well syringed with clear tepid water several times a day. Some of the bulbs are always at rest, so as to keep up a succession. I should say they would do as well in pots or tubs, standing in a tank.—(*Gard. Chron.*) No doubt the same treatment would do for *E. amazonica*.—ED.

DOUBLE LILIUM AURATUM.—It is very curious to watch the progress which the golden-rayed Japan lily is making towards becoming double. Last year, on more than one occasion, we saw the three outer stamens more or less completely replaced by petals; this year we have seen several blossoms in which all six stamens have been replaced by petals, and one flower forwarded to us by Mr. Veitch, presented an indication that we may expect ere long to find the pistil in the guise of petals, as in the flower in question it was already broken up into its component parts. This fine plant seems to vary in all sorts of ways.—(*Gard. Chron.*)

CULTURE OF VARIEGATED PELARGONIUMS.—Nearly the whole of the variegated varieties require to be planted in beds of highly enriched soil of good depth. When I say highly enriched soil, I do not mean that the bed should contain a mass of strong unfermented dung—far from it: the soil should consist of one-half good turfy loam, one-fourth part peat or leaf soil, and one-fourth part very rotten manure, the whole well mixed together with a good sprinkling of silver sand. The bottom of the beds should be thoroughly drained, and the depth of the above compost should be from 16 to 20 inches. If the plants are well rooted—and this is a very material point to be attended to—they may be planted out at the end of May. If the weather be dry after they are planted, they will require watering a

little until they begin to root into the fresh soil. After this they will take care of themselves.

THE AMARYLLIS.—The soil for the *Amaryllis* should be sand, peat and loam, equally mixed, one part, and cow dung reduced to mould the other part, all well amalgamated and laid together for some time before being used. The bulb should be thoroughly cleaned, and set half in the soil, half above. Whether it be the species or any one of the thousand varieties from them, the treatment should be the same. They must be set on the stove, and the soil kept only moist; when they begin to throw up their flowers they will require more frequent watering, and if they produce leaf instead of bloom, the growth must be encouraged. When, however, the green leaves turn brown at the tip and indicate that their growth is completed, let them have no more water, but put them out of the way on some shelf in a cool part of the house, or they may even be turned into the greenhouse in the summer months.

Where a number of these bulbs are grown, some will always be found ready to bloom. Therefore after they have rested awhile, and the leaves have died down, let them be cleaned and the surface of the soil stirred, and if the pots are small let them be shifted whole into larger ones, without disturbing the ball at all, but as yet give no water. They must be submitted to frequent examination, and when they are seen to be throwing up their flower sheaths, they must be removed to the lightest part of the house, and water must be given them, for when they once move they grow rapidly; and on the steady attention to them, supplying water when they want it, and of the same temperature as the atmosphere of the house, depends the full development of the flowers in perfection. One of the most common but most brilliant bulbous flowers that go under that name is *Amaryllis formosissima*, but this flower is like none of the family in appearance, though very dwarf and very beautiful.

The generality of the tribe seed freely, and thousands of new varieties have been raised from seed in this country. They should be sown in a seed pan or flower pot, in the soil mentioned above, and placed in the stove. When up they will require occasional watering, and no other attention that year, or until the foliage dies down. They may then be potted for the next year, about four or five in a 48 or 5-inch pot, for the body of earth in these pots is more favorable to their growth than the small quantity each would get in a small pot if planted singly. Here they may grow once more until they indicate the finish of their season, when no more water must be given. At the next move they should be potted, one in a 3-inch, or large 60 pot, and until these pots fill with roots they need not be shifted again, but when they are, it should be done without disturbing the roots. When large enough they will occupy their full-sized pots and bloom, and such of them as are worth keeping should be preserved and labelled. Those are entirely worthless in which the flowers are nearly all green and coarse, with only a stripe or two of color, and that not clear; and so are those which are very narrow and

sharp pointed in the petals, with deep divisions. Too many such as these are already in cultivation. It need hardly be added that the seed should be saved from those only which are beautiful in themselves, for it is a tendency in choice flowers to produce many worse as well as some as good as themselves.—(*Gard. Chron.*)

THE CYPRIPIEDUM.—The *Cypripedium*, or Lady's Slipper genus, is most remarkable for the lip of the flower having a very striking resemblance to a slipper. This is particularly apparent in *C. Stonei*, which has the most perfectly formed slipper of any of the species at present known.

C. insigne is a fine old orchid, worthy of extensive cultivation on account of its free growth and its habit of flowering through the dull winter months. It continues in blossom from November to February, and each flower lasts about two months. In this plant the sepals and petals are greenish-yellow, the upper sepals being thickly spotted with purplish brown, deeply margined in the upper part with white, while the slipper is yellowish-brown. *C. insigne Maulei* is an improved variety, having more white in the upper sepal, and the spotting more intense. *C. venustum* is a very distinct neat species, the leaves pale green, beautifully mottled with dark velvety green, so that when kept clean it is very pretty as a foliage plant. It flowers about the same time or a little later than the former. The sepals are whitish, distinctly striped with green; the petals greenish at the base, running into bronze towards the points, with a few black spots; and the slipper bronzy yellow, conspicuously veined with green.

I look on the foregoing species as being invaluable where decorative plants are required. They should be grown for this object in 6 or 8-inch pots; the best compost is good mellow fibrous loam. The plants should be potted pretty firm, and the pots moderately drained. They will do well in a cool house rather near the glass, so that they have plenty of light, but they need a slight shade from the burning sun. They require a good supply of water during the summer months, and particularly when the pots are full of roots; and they should occasionally be watered with clear liquid manure-water. Even in winter they should never be allowed to get dry at the roots, particularly during the time of flowering.

The following are also very beautiful kinds, and well worth a place in the choicest collection, flowering as they do during the spring and summer months, with the exception of *C. purpuratum*, which flowers in the autumn.

<i>C. barbatum nigrum</i> ,	<i>C. Lowii</i> ,
<i>C. barbatum grandiflorum</i> ,	<i>C. purpuratum</i> ,
<i>C. caudatum</i> ,	<i>C. Stonei</i> ,
<i>C. caudatum roseum</i> ,	<i>C. superbienis</i> ,
<i>C. hirsutissimum</i> ,	<i>C. superbienis Dayanum</i> ,
<i>C. Hookeræ</i> ,	<i>C. villosum</i> .

When grown in masses these plants make fine objects for exhibition purposes. The compost for them should be the top spit of good fibrous peat, with plenty of decayed vegetable matter in it, mixed with good fibrous

mellow loam, and a little rough grit or sand. The pots should be well drained. They will do well at the warmest end of an intermediate house, or the coldest end of the East India house. They must have a good supply of water, particularly when established, and as they have no pseudo-bulbs, they should never be allowed to get dry. If large specimens they require examining frequently, that they do not get dry in the centre.

Altogether the *Cypripediums* are a very conspicuous set of orchids. They vary very much in their forms, and the majority of them are exceedingly handsome. They moreover form a group very suitable to amateurs whose accommodation is limited, being compact in habit, free-flowering, and easily managed.—(*Gard. Chron.*)

CHEAP PAINTS.—The following mixtures for paints are highly recommended by those who have tried them:—

1. Water, lime, cement, and new oil, using any drying common to white lead oil paint. 2. Cement and coal tar, shading the color with ochre, Spanish brown, &c., to suit. Both modes give good results, and for coarse buildings we think the latter even better than oil paints of white lead, &c.—(*Hort.*)

THE MAHALEB OR PERFUMED CHERRY, so generally used for dwarfing the cherry upon, is one of the most beautiful of second class size, for ornamental grounds of small extent. It adapts itself to, and grows freely in all soils; is elegant in its foliage and spray; fragrant in its flowers and foliage; clear of all insects, and retains its foliage quite late in autumn.—(*Horticulturist.*) We quite agree with our contemporary, and are surprised that it is not more generally cultivated; the delightful fragrance of its foliage is sufficient to recommend it.—Ed.

PRUNING.—For the removal of small limbs from young trees hardly any time can come amiss. It were better to do it out of season than to neglect it. And it is a good rule to have a sharp pruning-knife always at hand, when passing among our young orchard-trees. There is but one time when pruning should be absolutely interdicted, and that is at the time that the wood is frozen. When so circumstanced, it should never, on any account, be cut or handled in any manner, not even to gratify your best friend by helping to a few grafts from your tested tree of some coveted variety. Let him wait for a thaw, or go away without them, rather than commit such an outrage upon your tree as to approach it when frozen.

While considering the question of the proper time for pruning there is an axiom of great importance, which should be firmly impressed upon the mind of the orchardist: much will depend upon which of the two leading objects he may have in view—vigor of growth and symmetry of form, or simply fruitfulness, as the result of his labors in pruning trees. Pruning at one season will induce the former effect; at a different period of the year, the same work will conduce to the latter results. Hence, the value

of this postulate which is pithy and easily remembered, PRUNE IN WINTER FOR WOOD—IN SUMMER FOR FRUIT.—(*Dr. Warder.*)

MANETTI STOCK FOR TEA ROSES.—Mr. Saul of Washington, in giving an account of the culture of roses, gives the following advice about the Manetti, and its value for the Tea and other sorts too tender to survive our cold winters:—On this stock, on the approach of winter, the collection of Teas may be lifted with as great facility as a collection of dahlias or tuberoses, placed in a cellar, or any place where they can receive protection, to be returned to the garden at the opening of spring,—the roots will, of course, require to be covered with sand or mould during winter. Grown in this way they sustain no injury from the removal; on the contrary, they are benefited, the frequent removals having a tendency to induce fibres, whilst the plants can be thoroughly examined before their return to the garden, and the rudiments of all suckers taken off; here they will grow freely and bloom superbly. It may be asked, why not move them on their own roots? To this the answer is—Roses on their own roots have not the amount of fibres which a Manetti stock has. Hence the risk of loss is greater—indeed the per centage of loss is considerable when on their own roots, and they will not take to their new situation with the vigor of a Manetti.—(*Address before the Pennsylvania Horticultural Society.*)

SALT FOR PLANTS.—We often see the use of salt recommended for plants. Regularly, every year or so, a paragraph goes the rounds of the papers, advising its application to plum trees and asparagus, being almost a sure prevention of the black knot, and producing grand stalks of asparagus. As our experience with it, though accidental, has been of a serious kind, we never could advise its use, but on the contrary, with perhaps few exceptions, if any, it is, we think, fatal to any crop. The *Revue Horticole* gives an account of several careful experiments made with salt water upon plants, and although there was only 7 per cent. of salt, it was so deleterious that nearly every plant watered with it died. This should be sufficient to banish its use from all gardens.

LONICERA AUREO RETICULATA.—This truly beautiful hardy climber is now in full bloom in my garden, and as I have never heard of its having bloomed in the open air in this country, before, it occurred to me that many who, like myself, have cultivated only for its lovely foliage will be glad to learn that it does bloom. The scent is delicious, and the plant flowers freely. It is growing against a south wall, and has never had the least protection during the three years it has been planted.—(*Gard. Chron.*)

LILIUM AURATUM.—We have now a fine plant of this lily in full bloom, and not having seen or heard of one with so many flowers on one bulb, I think it deserving of notice. I bought it from Mr. Turner of Slough in the

autumn of 1864. Last year it sent up one stem, which produced six flowers. This year it has three flower stems, the highest of which measures two feet nine inches. One stem has 17 flowers on it, another 14, and another 11. A small shoot by the side of the others produced one flower, making in all 43 large and perfect blooms.—(*Gard. Chron.*)

ROSES FOR POT CULTURE.—The following are recommended as being unusually fine under pot culture, in the collection of a skilful English rose grower: Anna Alexieff, General Jacqueminot, Souvenir d'un Ami, always good; Madame de St. Joseph, very beautiful, highly perfumed; Senateur Vaisse, second only to Chas. Lefebvre; Victor Verdier, very grand, much superior to Jules Margottin, fine habit and free; Madam Damazin, Vicomtesse de Cases, beautiful in color, surpassed, however, by Marechal Niel, and if the Marechal is as fine a bloomer as the Vicomtesse, nothing will be so telling in a collection. La Brillante, beautiful in the bud; Francois LaCharme; Duc de Cases, fine, rich dark color, but thin; John Hopper, extra fine; Souvenir de la Reine d'Angleterre, of immense size; Niphetos, one of the oldest teas, but still good and distinct; Comtesse de Chabillant, of exquisite form; Madame Campbell d'Islay, shape of La Reine, but beautifully mottled; and Paul Perras, as usual, very showy and fine. Lælia, superb. Charles Lefebvre is the rose of all roses.—(*Gard. Chron.*)

LANDSCAPE GARDENING.—The *Nation* indulges in the following bit of criticism on a prevalent style of landscape gardening:—"Who has not found himself impatiently following gravel *s*'s over an absolutely level and unobstructed field of grass? Who has not seen with disgust scallop-edged tanks cut out of a level plain as flat as a barn floor, and provided with curb-stones to hold the water in? Such tanks are more like wash-tubs than nature's ponds. Long sweeps and gentle curves in pathways are much more natural than *u*'s and *s*'s. Above all, water-boundaries should be determined solely by the varying level of the surrounding land, and the edges of artificial ponds should invariably be sloping, and made of sand, gravel, or pebbles, never of masonry. An arch or a stone bridge is a fine feature in a landscape, yet we do not build a series of arched bridges across an unbroken plain, simply in order to meander up and down, after the manner of the mythical sea-serpent. Horizontal meandering, without due cause, is quite as absurd."—(*Nation newspaper.*) We quite agree with the critic in his remarks. We cannot say we ever saw half a dozen gardens in this country laid out according to the true principles of landscape art. And most of the attempts we have seen—and these too by those calling themselves landscape gardeners—have been in just the style which the *Nation* alludes to, and as meaningless and tasteless as could well be conceived.—Ed.

THE ANNUAL EXHIBITION of the Massachusetts Horticultural Society will be held on the 18th, 19th, 20th, and 21st of September, at the Society's Hall.

Societies.

AMERICAN POMOLOGICAL.

The following circular has been issued by the Executive Committee:—

Whereas, The American Pomological Society was ordered to be convened at St. Louis, Mo., on the fourth day of September next, for the purpose of holding its Eleventh Session; and,

Whereas, the existence of cholera in several of the cities of the United States has become manifest, thereby creating more than usual precaution in regard to visiting places distant from home:

Therefore, in consideration of this fact, and also of the fact that there is a small crop of fruit in many parts of our country, the undersigned, by and with the advice of the Executive Committee and other leading pomologists, does hereby postpone and defer the meeting of said Society to the year A. D. 1867, when due notice will be given for its assembling in the afore-said city of St. Louis.

MARSHALL P. WILDER, *President*.

CAMBRIDGE HORTICULTURAL.

This Society will hold its next Annual Exhibition at the City Hall, Cambridge, on the 26th and 27th of September. In addition to liberal prizes for fruits and flowers, the following special premiums are offered:—

For the largest and best 12 specimens of Beurré Diel, Duchess, Beurré Clairgeau, Flemish Beauty, or Bartlett pears, a Silver Cup, valued at \$25. Open to all competitors.

For the largest and best 12 specimens of Bartlett, a gratuity of \$10, to be confined to the members of the Society.

All the fruits, exhibited for the pear prizes, to be sold for the benefit of the Society.

Horticultural Operations

FOR SEPTEMBER.

FRUIT DEPARTMENT.

THE month of August has been cooler, with frequent light showers, and highly favorable for trees. They never looked better, and the contrast between August of this year and last is marked enough. Though the crop of apples and pears is not large, it looks remarkably well, and the

specimens are much larger and better than in 1865. The late cool nights have brought on some mildew upon the grapes, but otherwise they look well.

GRAPE VINES, in the earliest houses, will soon need pruning, preparatory to starting them into growth. If, however, this is not intended until later, it may be deferred for a month or so. Vines in the grapery will have their crop quite mature, and, if it is desirable to have the grapes hang upon the vines, the house should be freely aired every day, and all moisture withheld. If the grapes are cut the vines may be allowed to ramble freely, giving plenty of air, to thoroughly ripen the wood. In cold houses the fruit will now be coloring, and if the nights are cool but little air should be allowed; if warm it may be admitted both night and day. Stop the laterals where they have grown freely and give too much shade.

STRAWBERRIES should be planted this month; it is a better time than August; and, if the work is well done, a small crop may be obtained next year. Clear the weeds from old beds, and lay in the runners, or, if growing too freely, they may be cut off, particularly those kinds intended to grow in rows or hills.

SUMMER PRUNING should be continued as long as the growth is vigorous, discontinuing it when this ceases. If trees are over vigorous they may be root-pruned, if done at once.

FRUIT should be thinned for the last time, taking off all inferior specimens, and even those which are good, where the crop is large for the tree. Water late pears, if the weather should be dry.

FLOWER DEPARTMENT.

The month of September is a busy time where there are collections of plants, as everything in the least tender should be housed by the end of the month, and many of them before that time; as it is not safe to leave heliotropes, salvias, and similar plants out when the nights are cold. Preparations should be begun at once to move all such to the house, washing the pots, and top-dressing if they require it. Frames should be got ready to receive all small stock which succeed better than in the house. Prepare soils for potting, and have it in readiness for use at all times.

CAMELLIAS should be prepared for removing to the house by the 25th of the month, or sooner. Wash the pots, and clean and wash the leaves if they require it. Thin out the buds where they are too thick, if fine large blossoms are wanted.

PELARGONIUMS should now be shaken out of the old soil, and put into smaller pots, in a light soil, and placed in a frame or in the house where they can be sheltered from heavy rains. Every effort should be made to get them well established before winter, keeping them cool, after a week or two, and watering cautiously.

CUTTINGS, of all kinds, should be put in this month.

FERNS should be moderately watered, but have liberal syringings every day.

TUBEROSSES, in pots, or the open ground, should be removed to the house before frosty weather.

AZALEAS should be watered more carefully as the season advances, but they should be freely syringed. An occasional watering of liquid manure will benefit the plants. See that they are all removed to the house before frosty nights. Leisure time may be occupied now in tying the plants into shape.

CHRYSANTHEMUMS will now be growing rapidly, and they should be watered twice a week with liquid manure. Remove to the house or a frame before frost.

CINERARIAS should have a shift into larger pots, keeping them in a cool frame, near the glass.

CHINESE PRIMROSES should be repotted, if not already done. Keep in a frame, near the glass.

CYCLAMENS, planted out, should be potted this month, and placed in a cold frame.

HEATHS, **EPACRIS**, and similar plants, growing in the open ground, should be potted and removed to a cool frame, keeping them close a few days, till rooted in the fresh soil.

VERBENAS, for spring stock, should be propagated from cuttings, or young layers, taken up and potted. Remove to a frame.

MONTHLY CARNATIONS, for winter flowering, should be taken up and potted in good rich soil, and kept in a frame till well established.

CALADIUMS will now be growing vigorously, and will require plenty of water. Shade may now be dispensed with, except in very hot weather.

PLANTS, of all kinds, likely to be injured by frost, should be potted early this month. If wanted for early blooming, remove to the greenhouse; if not, keep them in frames as long as the weather will admit.

IXIAS may be potted this month.

FLOWER GARDEN AND SHRUBBERY.

The recent fine showers and genial rains have given a vigorous growth and handsome verdure to the lawn. Continue to cut and roll every ten or fifteen days.

CARNATIONS AND PICOTEES may be taken up, and removed to a frame.

NEAPOLITAN VIOLETS should be planted in a rather deep frame, about a foot apart.

BULBS may be planted this month, though October is just as good a time.

PERENNIAL PLANTS, of many kinds, may be transplanted this month.

PANSY SEEDS may be sown in a frame.

DAISIES should be removed to a frame, where they can be protected in winter.

DAHLIAS should be tied up, useless laterals cut off, and the plants watered, if the weather is dry.

GRAPE CULTURE.

SHALL we manure our grapes? This is the question which just now appears to be much agitated and discussed by horticultural associations and societies interested in fruit culture, as well as by cultivators in our agricultural and gardening journals. It certainly is a question of some importance, and one which, it would seem, ought to be decided without a great deal of discussion. If, after many hundred years devoted to grape culture by the vineyardists of France this question has not been settled, it hardly appears probable that our horticultural discussions will be able to give much reliable information upon this subject.

The question refers, of course, to our native grapes, for we take it for granted that any attempt to raise the foreign grape under glass, without manure, would end in a most signal failure. Hence we presume the whole subject turns on the point, whether our native grape should be treated differently from the foreign; whether, indeed, it is so very unlike it as to originate a new system of culture, and to ignore all that has been accomplished with the foreign grape. If this is true, then of course the skill and experience of vine cultivators in the vine growing countries of Europe is worthless, and we must not only have new varieties of grapes, but a new method of culture, adapted to the development of the American vine.

Is this so? Is our native hardy grape, and all the numerous varieties produced from it, so different from the foreign as to induce us to reject the long experience in the cultivation of the latter, and adopt a new system? We think not; but, on the contrary, we believe that every cultivator who adopts the no-manure plan of growing the vine, will regret the moment that he listened to such advice.

That grape-vines can be grown without the aid of manure there is no doubt; but whether the result would be a profitable one, is the question. On some soils, exceedingly rich,

it might be, in part, or wholly dispensed with; but that this is anything more than an exception to the rule, no one can well doubt. But it is argued by some that excessive growth, caused by manure, is injurious, and engenders the rot and mildew, and other maladies or diseases of the vine. This may or may not be true; only actual and careful experiments will prove this. We have seen vines grown without any manure, or even cultivation of any kind, quite as badly mildewed as those which had been highly enriched and thoroughly cultivated.

The vineyard culture of the grape is one thing; and the culture for the table another. Two processes very unlike, and requiring very different treatment; the first having for its object grapes in moderate or profitable quantity, fully mature, saccharine, and free from excess of watery matter; the latter, bunches and berries of large size, handsome, well colored, juicy, rich, and excellent. The former may be obtained, perhaps, without manure; the latter cannot.

That the native grape does not require very similar treatment to the foreign we cannot admit. The famous Chasselas grapes of Thomery, which supply the market of Paris, are the product of vines under the highest treatment, both as regards manuring and training, and their superiority is owing to their special mode of culture. The ordinary grapes of the market are grown with but little care, in the ordinary vineyard style, the vines trained to stakes, and, though excellent, are not to be compared to the former, for beauty or quality.

What would be thought of the gardener who should attempt to grow grapes under glass, in a border, without manure? Yet, if the object is to raise fine grapes, why should not our native kinds have the same treatment as the foreign.

The argument of some writers is, that the vine takes so very little from the soil, and so large a part from water and the air, that manure is not therefore necessary. We shall not stop to discuss this question, simply remarking, that without vigor it can take very little from either the soil or air. It is important that it have the means to live and grow, and this is doubtful, without the aid of manure.

Extremes follow each other. Not many years ago trenching

and manuring was one of the first objects in the culture of the grape. This is now reversed—no trenching, and no manure to accomplish the same results. How is the young and enthusiastic vine grower to proceed under such advice? Are there no principles of culture generally applicable, or is grape-growing a haphazard affair, to be treated according to the whim of all who embark in the enterprise?

We have not endeavored to bring together the remarks of those who have advocated grape-growing without manure, because we think it would be an unnecessary waste of time, and of doubtful benefit to our readers. That vineyard culture for wine is different from culture for the table, all must admit. And while the object of the former is, and must always be, to secure a well-ripened crop of grapes, excess of moisture should be guarded against, as it would undoubtedly cause a late growth, and endanger the maturity of the fruit. And there may be soils so naturally rich as to need little artificial aid; these, however, in New England, are rare. None will be injured by its use, and all will be more or less benefited.

What is good for the young vine, is, to a certain extent, good for an older one; and if the former can be well established, without manure, it is more than we have been able to do. Yet, in saying this, we are no advocates of the excessive use of enriching materials to force the vine. We long ago answered this question, in our remarks on the use of dead horses, &c., for grape borders, contending, as we now do, that they are injurious, if not fatal to the vines.

It will be perceived that we are no advocate for growing grape vines without manure. All the weaker kinds, such as Delaware, Rebecca, &c., cannot be well established without its use. The failure to make such varieties grow freely has been from the want of manure, or enriching material of some kind. Their subsequent culture requires less, but they will be more vigorous and productive, if not neglected. The stronger growing sorts, like Concord and Hartford Prolific, will grow freely in any good soil, and require less manure than the weaker growing sorts; but a moderate manuring will not be lost on these kinds.

For the culture of grapes for the table or market, good sized clusters and large berries are the desideratum. For this purpose the soil should be good naturally, moderately dry, or well drained, and well manured, the success being in the ratio of the absence or excess of either. Thoroughly decayed manure should be used.

HOW TO MAKE A GOOD LAWN.

BY W. F.

THE production of a good turf of fine grasses, such as are adapted to the purposes of lawn, without intermixture with weeds and coarse grasses, is a work very easily accomplished with care and attention, but very difficult if the seed be merely sown and then neglected. When the ground is turfed from a pasture, a good lawn is seldom obtained, because the turfs are apt to be full of the roots of various weeds and wild plants, which are difficult to be eradicated. This method of covering a ground with lawn is also very expensive. Still if the saving of money or labor is not to be taken into account, and a good turf from a pasture is accessible, this process of turfing is the readiest method of accomplishing your object. The most of the weeds will require to be pulled up by hand; but many will perish in their new situation, if the soil be rich and promotive of a luxuriant growth of grass.

The cheapest method of raising a good lawn, and of obtaining the best assortment of grasses for this purpose, is to sow the seed upon well prepared ground. If your soil is free from the seeds of weeds, and from the roots of witch grass, you will be saved much expense of labor in weeding; for the great difficulty in the way of your success is not that the grasses which you have sown are tender or apt to perish, but that multitudes of rank weeds will choke and destroy it. It is necessary, therefore, to be closely watchful of these from the first appearance of the young and tender grass. The land, previous to strewing the seed, should be ploughed,

raked and rolled, so that if any persons cross upon it, their footsteps should make no unsightly depressions upon the surface. Another advantage of rolling is, that the grass is not so apt to be pulled up with the weeds as when it is soft.

There is very seldom a piece of land, unless it has been subjected to high cultivation, that is free from weeds and the seeds that produce them. Every tract of land in this part of the country is full of the seeds of at least a dozen species of pestiferous plants; and these plants are as injurious to the growth and prosperity of the grass, as to that of any crop of vegetables or flowers; even more injurious to it than to a crop of wheat, rye or barley, because these cereals grow as rapidly as the weeds, and soon overtop them. But the perennial grasses which are sown for a lawn, are very slow in their growth, and even if they have come up well and vigorously, the ground must be frequently and carefully weeded, or you will not obtain a good lawn before the third year.

I will give the reader a short account of my mode of proceeding, and my experience with a piece of ground which I have covered with an excellent growth of lawn grasses since May. The seed was sown in that month, during a very unfavorable time, while the soil was suffering with a long continued drought. The earth was carefully raked and rolled; but as it had not been exhausted by tillage, I did not manure it. I waited till I was out of patience for rain, and finally strewed the seed in perfect dust which was whirled about incessantly by the strong winds that prevailed at that time. It remained upon the ground more than a week without a sprinkling of rain, and I expected to be obliged to resow it. In about a week after the first shower that fell upon it, the minute spears began to green the surface, coming up evenly and well. I had then but little conception of the care and industry which would soon be required to prevent the destruction of this young and tender grass, by pests of weeds of more than a dozen species.

Soon a crop of weeds appeared, of more than a dozen species, each one alone almost as abundant as the grass which I had sown. I immediately weeded the ground thoroughly by hand, pulling up every weed which was large

enough to be seized. My neighbors advised me to wait until the weeds and grass had attained considerable height, and then cut them down with a scythe. I did not conform to this advice, though I felt some doubts of the advantage of weeding; for the weeds were so numerous, and had such large roots, that every one I pulled up brought more or less grass along with it, and there seemed to be some danger that the grass as well as the weeds would be exterminated. I persevered, however, feeling convinced that less grass was destroyed by weeding, than would be destroyed by the weeds, if their roots were left in the ground.

It is surprising what a large number of species, and what an immense quantity of each, will encumber almost every piece of ground thus planted. The most troublesome and rapid growing weed is the Roman wormwood. It is the first to appear, and the last to disappear. It would be easily destroyed, if the soil did not furnish such a rapid succession of crops. In less than a week after the ground had been cleared of it, the whole space would be covered with a new growth of it. The fields all around my own grounds were covered with a forest of this *food for the Gods*; for such it is, if it be what its name (*Ambrosia*) implies. As I could not afford to raise food for the immortals, I devoted each successive crop to the compost heap, not without some doubt whether it would furnish in its decayed substance any valuable fertilizing material.

Besides Roman wormwood, there were many other species of weeds. There were Sheep sorrel, two kinds of mustard, three polygonums, three chickweeds of different genera; one amaranth, one Chenopody or Pig weed, one portulacca, a very troublesome weed, one fleabane, one ranunculus, and a very pretty species of euphorbia, with a black spot in the centre of each minute leaf. Each of them alone would have been sufficient to cause me a great deal of labor and attention, in order to eradicate them. Fortunately they were a check upon each other, and each species could not be so troublesome as if it were alone. The Roman wormwood was the great conqueror of the other weeds, itself the worst of all.

After the weeds above enumerated were very nearly destroyed, a host of annual grasses followed them, chiefly panicums. These were almost unconquerable. They came up so thick as to render it difficult to obtain hold of them; and if allowed to attain any considerable size, they spread their tenacious roots under so much surface, that I was obliged to pull each plant up by fragments. I considered it better to take up their roots, than to cut them off, when they would continue to vegetate at the expense of the grass. These panicums, of which I recognized as many as five species, might undoubtedly be cultivated with some advantage. I am confident that a larger crop of hay could not be obtained from any of the perennial grasses; but the hay would be coarse and necessarily mixed with weeds that generally obtain the start of them early in the season. There is one species that bears a strong resemblance to the Hungarian grass, grows erect and affords a stalk containing a considerable quantity of sugar. Hogs are very fond of it when it is green and tender.

With regard to lawn, it is a question with many, whether the ground in front of a dwelling house should be grassed or planted with flowers. This ought of course to be decided by the taste and requirements of the owner. It cannot be denied, however, that grass is promotive of neatness and comfort, and requires less labor and expense to be kept in trim, than the same ground occupied by flowers. A lawn needs to be mowed several times during the season, but the expense of this mowing is a mere trifle compared with what is required to preserve the neatness and prosperity of a bed of flowers. Lawn causes no dust or dirt, and if the grass be kept shorn, it collects none of importance; it is neat and beautiful to the sight, it can be made a pleasant resort, under the shade of trees, and admits of embellishment with frequent clumps of flowering shrubs. It is to be considered that trees and shrubs, if so numerous as to make a thicket, are destructive to the growth of grass, which does not thrive under the shade of trees better than any other plant.

The English lawns, when raised from seed, are commonly sown with *Poa pratensis*, called here *tickle-top*, one of our

most common grasses by the roadsides and in the upland pastures. This they use in the greatest quantity. With it they mix the sweet scented vernal grass, *Anthoxanthum odoratum*, having an abundance of that fragrance which is peculiar to new made hay. It is not true, as it is sometimes stated, that the sweet scents of a field of new mown hay come entirely from this grass. All the grasses afford it, except the wiry swamp grasses. To these they add meadow foxtail—*Alopecurus pratensis*; dogstail grass—*Cynosurus cristatus*; and hard fescue grass—*Festuca duriuscula*.

Different climates require different treatment in this respect. It is impossible to preserve the verdure of our lawns as they are kept in England, where the dampness and moderate temperature of the atmosphere prevent the grass from becoming parched with drought. The beauty of a lawn, its velvety character, as well as its verdure, depend as much on a proper selection of seed, as upon any other circumstance. In our dry climate the grasses most generally sown for lawn are the common red-top, or bent-grass—*Agrostis vulgaris*, the white-top—*Agrostis alba*, the tickle-top—*Poa pratensis*. Other kinds, particularly the orchard grass—*Dactylis*, and some of a fine texture will become mixed with the kinds that are sown, spring from seeds strewed upon the soil from natural causes. There is only one kind of perennial grass that needs to be eradicated from a lawn. This is the witch, or couch grass—*Triticum repens*, which is as much of a pest and nuisance in a lawn as in a garden. It is of so coarse a texture as to be destructive of that velvety softness which is required in a lawn, it prevents the prosperity of other grasses, and gradually supplants them, and ought to be completely eradicated from the soil before it is sown with grass seed.

It may not be too much of a digression from my subject to add that the annual grasses, having, for the most part, very tough and fibrous roots, answer a very good purpose in binding a loose surface of gravel in the paths. Finding the paths in my garden were of loose gravel, and having no substance available that would serve to harden it, I allowed them to be overgrown with a dense crop of annual grasses,

which were mowed with a scythe, as soon as they had attained their full growth. The surface of these paths is so hardened by a close network of these roots that a cart containing a ton of coal, passing over one of them, produced only a slightly perceptible depression upon the surface. My opinion is that it will allow a spread of gravel, which is to be thrown upon it to harden and become impenetrable by ordinary travel, before the roots have decayed and lost their binding force. This idea was suggested to me when I was making an attempt to hoe up these grasses, when they were only about a week old. Finding how firmly, even at that early period, they bound the surface of the gravel, I determined to make practical use of what would often be only a nuisance.

THE HOLCOMB BLACKBERRY.

BY D. S. DEWEY, HARTFORD, CONN.

THE Holcomb Blackberry was first brought to public notice at one of the regular weekly exhibitions of the Hartford County Horticultural Society, in the summer of 1855, by Deacon E. A. Holcomb of Granby, Conn. The fine appearance and flavor of the berries upon some of the bushes which were growing in an uncultivated state, upon the hillside portion of his farm, induced him to transplant some of the best of them into his garden; and the comparative merits of the fruit, after three or four years' successive exhibition, warranted the society in giving it a name and extending its "local habitation."

A few years since I visited the place of its origin, when the crop was in perfection, and was agreeably surprised to find that, in luxuriant growth and productiveness of plant, and "quality" of fruit, it was so much better than anything else of the kind, which I had ever seen in a wild state. (It was, relatively, like those clumps of rare red raspberries which one sometimes chances upon, while threading a trout stream in Northern Massachusetts, or New Hampshire; and which, by

the way, I think have never yet been successfully transplanted, to any extent.)

I have fruited it now for eight years, and prefer it to the New Rochelle, or the Dorchester, as grown upon the same ground, and under the same circumstances. It is larger and more productive than the Dorchester; and earlier and harder than the New Rochelle; and ripens up fairly and satisfactorily, during an interval of about five weeks.

Size, (of fruit,) large; shape, moriform; color, black; flesh, high-flavored, and consistent; time, early, (and long;) canes, dark brown, (when ripe,) moderately stout and long, thrifty, (but not rampant,) productive and hardy; does well in heavy soil, but better in good sandy loam, and delights in shade.

We have already recorded our opinion of the Holcomb blackberry. Our correspondent sends us a photograph of the berry, but it so nearly resembles in form and general appearance the Dorchester, that we have not thought it an object to offer an engraving. Its general merits are stated by Col. Dewey, but he has omitted to say it has an agreeable mixture of sugar and acid, which neither the Dorchester nor the Lawton possess. It is not so sweet as the former, nor so acid as the latter, and the flavor is more decided than either. It is a very fine berry.—ED.

NEW STRAWBERRIES.

BY W. R. PRINCE, FLUSHING, L. I.

I notice by the last number of your Magazine that a further knowledge of some varieties termed *new* is called for.

GOLDEN QUEEN was first announced about six years ago, and proved identical with Trollope's Victoria, but is now announced again by W. C. Carpenter as new and distinct. Union, much puffed, proved to be the same.

IDA is a variety of F. Illinoisensis, a miserable sour berry, first announced two years ago, tested and thrown aside as worthless.

METCALF'S SEEDLING, from Michigan, matures its fruit eight days before the Wilson, but the Wilson is a late berry compared to many, and the Metcalf is a week or more behind many varieties grown here and elsewhere.

AGRICULTURIST, your correspondent, Mr. Jordan, most truly says "has not sustained its reputation anywhere." It never had any with amateurs from the day of its first display, when all were prohibited to eat or touch.

GEORGIA MAMMOTH is a variety of *F. Illinoensis*, sour, dry and husky; one of the most worthless.

LADY FINGER is of poor quality and unproductive, and, like Wilson, blights more than half its blossoms.

BRITISH QUEEN of Knox's Catalogue, I suppose you know is the old Rivers's Eliza.

CUTTER'S SEEDLING is acid and short crop.

DURAND, with many good qualities, has, as Mr. Seth Boyden says, this disadvantage, that "the plant is small."

GOLDEN SEEDED is of good flavor, but miserably unproductive.

BURR'S NEW PINE, the variety so advertised is not the true variety, which was of excellent flavor, but small and short in crop.

LENNIG'S WHITE (not Lenning's) is identical with White Pineapple and Albion White. It is the best of all the Whites, and one of the most hardy plants.

HOVEY. I have several seedlings from it, the Calliope, Malvina, Melanethon and Scarlet Magnate, three of which are larger than the parent, but I cannot refrain from doing this justice to the Hovey after its long trial of about thirty years, that with such growers as understand its habit, and who will select a suitable fertilizer, there is none other more reliable for regular and abundant crops, than this old and most worthy favorite of our gardens.

POMOLOGICAL GOSSIP.

PRESERVING FRUIT FROM INSECT RAVAGES.—A simple method of preserving fruit from insect ravages would be a great boon

to horticulture, for the quantity of fruit destroyed by insects depositing their eggs in fruit blossoms is enormous. These creatures are said to have a great antipathy to vinegar, the mere odor of which is enough to drive them away, and in some cases to destroy them, and nothing more is required than to sprinkle the branches with a mixture of vinegar and water at the moment the blossoms begin to appear. The plan is recommended for adoption by the Society of Practical Horticulture of the Rhone. The mixture recommended consists of one part of vinegar, nine parts of water, but as French vinegar is very strong, perhaps the amount of water should be less when English vinegar is used. When the liquids are well mixed, the solution is to be sprinkled over the flower buds by means of a garden engine or syringe, or even a watering-pot with a fine rose. M. Denis, the director of the School of Arboriculture at Lyons, reports that fruit-trees so treated were covered with fruit, while those to which the acidulated water was not applied bore scarcely any.

METCALF'S SEEDLING STRAWBERRY.—We see it stated that the merits of this strawberry consist mainly in its earliness, ripening eight days before the Wilson. We know nothing of the berry, but, as regards earliness, whatever other qualities it may possess, which may be of the highest merit, it is not so early as Jenny Lind, which is full TEN TO TWELVE DAYS earlier than the Wilson. Even the Boston Pine is eight days earlier, so that, in reality, it must possess other qualities than earliness to make it valuable.

NEW VARIETIES OF STRAWBERRIES, recently introduced from Belgium, France, and England.—William R. Prince, Esq., Flushing, L. I., sends us the following list of new strawberries. All, who are conversant with the publications of those countries on this subject, will know how to appreciate this collection, among which are comprised the very elite yet known:

Pine Varieties.—Bijou, Boule d'Or, Carniola Magna, Doctor Nicaise, Geveniver, Globe, Hero, La Robuste, La Rustique, Leonce de Lambertye, Modele, Premier, Sabreur, Savoureuse, Sir Joseph Paxton, Souvenir de Kieff, Vineuse de Nantes, Virginie.

Chili.—Chili Orange, Chili Crimson, Elton Improved, Iouna, Rosy White, Vilmorin.

Alpines.—Blanche d'Orleans, Janus or Twinberried, La Grange, Triomphe de Hollande.

European, Wood and Hautbois.—Double Flowering, Hative de Fontenay, earliest of all strawberries, Royal Hautbois, Vineuse de Champagne.

NATIVE GRAPES.—The show of native grapes, at the Annual Exhibition of the Massachusetts Horticultural Society, comprised a large number of varieties, and many very good specimens. Mr. J. Dingwall of Albany, sent about 20 varieties of Rogers's grapes, Nos. 3, 4, 9, 15, 19, 22, 33, 41, 43, &c. Several of them were about ripe, but, with few exceptions, required full a fortnight to attain their real maturity. Nos. 3 and 9, red grapes, are tolerably early, but hardly up in quality. Indeed, as we have before remarked, No. 4 represents about all the black sorts, and 15 the red ones. Mr. Bailey's Adirondacs were good clusters and large berries, fully ripe, remarkably sweet and delicious, fully sustaining its high reputation. Ionas, from Mr. Dingwall and J. F. C. Hyde, were not quite ripe. Davis & Bates had, among others, the Adirondac, Crevelling, Allen's Hybrid, Rebecca, Diana, Nos. 4 and 15, &c.; also, specimens of the Framingham, small clusters from a young vine, but perfectly ripe, sweet, and fine. This, we think, will prove a more valuable grape than the Hartford, ripening at the same time. We were in hopes to see the Israella, but it was not shown. Mr. Barnes had a few clusters of his new grape, which continues to promise well. A new variety was sent from Hartford, Ct., consisting of three well-formed clusters of a new seedling white grape, which originated in that city eight years ago; a handsome, sprightly grape, which has all the good qualities of the Hartford Prolific, *including its earliness*, and is hardly distinguishable from the Rebecca, when in its best condition, while it ripens its crop fully two weeks before that estimable variety.

TWENTY FINE VARIETIES OF PEARS.—The following are the kinds which obtained the first prize at the Exhibition of the Massachusetts Horticultural Society, on the 18th of Septem-

ber. There were eight competitors for the twenty dishes: Moore's, Beurré d'Anjou, Beurré Bosc, B. Hardy, Doyenné du Comice, Urbaniste, Pratt, Dana's Hovey, Marie Louise, Swan's Orange, Duchesse, Howell, Sheldon, Doyenné Boussock, Andrews, Seckel, Bartlett, Belle Lucrative, Lawrence, and Beurré Superfin, from Hovey & Co. The second and third prizes in the class of twenty, were obtained by the Cambridge cultivators; H. Vandine being second, and Davis & Bates, third, both of them fine collections of fine pears, mostly the same as those which obtained the first prize.

GRAPES GROWN IN ENGLAND.—The show of fine grapes continues to be a prominent feature of the London and Edinburgh Exhibitions, and we think some account of the remarkable specimens cannot fail to interest all grape growers. The Royal Caledonian Horticultural Society held its autumn show at the Music Hall and Assembly Rooms in Edinburgh, on Wednesday and Thursday, September 5 and 6. The grape growers of England were represented by Messrs. Meredith and Hill, and those of Scotland by Messrs. Fowler and Thomson. The following is the report on grapes:—

For the best 8 varieties of grapes (excluding Child of Hale, White Nice, Syrian, Barbarossa, and Raisin de Calabre), one bunch each, there were four entries, but only one competitor came forward in the person of Mr. Archibald Fowler, gr. to the Earl of Stair, Castle Kennedy. His collection was a unique one, each bunch being a model of cultivation, but most of the sorts not finished up to that point which it is desirable for all grape growers to aim at. The following are the names of the sorts: Black Hamburg, a nice compact well finished bunch; Golden Hamburg, of similar dimensions and character; Black Morocco, a much more handsome bunch than that he exhibited last year, the berries large, having a fine blackish blue hue at extremity, but reddening towards the footstalk; Trebbiano, 15 inches long by 12 inches across, as compact as can well be imagined; Muscat Hamburg, a beautiful bunch, measuring 12 by 10 inches, and a model in point of form, but not at all up in finish; Muscat of Alexandria of same dimensions, and good in every way but finish; Black Lombardy, a variety similar to Black Prince, a fine oblong compact bunch,

with good sized berries ; and last and most wonderful of all, Duchess of Buccleugh, measuring 16 inches long by 13 inches across, not fully finished, but quite startling everybody with the size which Mr. Fowler has been able to grow it. It would weigh about 3 lbs., but Mr. F. assured us he had it much larger at home, having cut the ripest for exhibition purposes.

For a collection of 4 kinds of grapes there was a spirited competition, Mr. Meredith being placed 1st, and deservedly so, with a fine sample of Hamburg colored as Mr. Meredith apparently only can do ; Trebbiano, fine in bunch, berry, and finish ; Burchard's Prince, fine finish, but small both in berry and bunch ; and Muscat of Alexandria, fine in bunch and berry, but unripe. Mr. Turner, gr. to Mark Sprott, Esq., Riddell, Selkirk, was 2d, with good Hamburg, Lady Downes, Sweetwater, and Muscats. Mr. Temple, Balbirnie, Markinch, had also a fair assortment, and so had Mr. John Laing, gr. to R. Cathcart, Esq., Pitcairlic.

For a collection of Black Hamburgs, Mr. Meredith won easily with the following sorts : Millhill, Champion, Old Black, Pope's, Victoria, and Richmond Villa. The Millhill is decidedly the best for finishing and for flavor ; Pope's the smallest ; and Victoria the largest and most attractive looking berry, but deficient in flavor to either of the others.

For a collection of Muscats, Mr. Fowler had much the finest and most distinct lot, although not so numerous in bunches as that of Mr. Mitchell. They comprised the Tynninghame variety, the longest and probably best formed bunch of the lot ; Bowood, the Old Muscat, and the Muscat Escholata, a very large berry in the way of Canon Hall, and as shown a free setter, but as to flavor we were not in a position to judge.

For three heaviest bunches, Mr. Fowler had wonderful examples, and the most wonderful of all was Muscat Hamburg, coming under the test with a bunch 16 in. by 13 in., as compact and handsome a bunch as could well be moulded, but not well colored, as indeed it scarcely could be when 40 lb. of grapes were cut off one rod : Trebbiano, a remarkably large handsome bunch, and White Nice, 23 in. across by 20 in. long. The same gentleman had also the award for the heaviest single black and white with Muscat Hamburg, in the former

instance weighing $6\frac{1}{2}$ lb., and measuring 18 in. long by 13 in. across, and this too off a plant growing on its own roots. What will folks say that blamed its constitution after this? White Nice was the heaviest White, weighing $10\frac{3}{4}$ lb. Mr. Laing and Mr. John McKay, gr. to W. Wood, Esq., Keithick, were equal second.

For the two best Muscat of Alexandria, Mr. James McConnachie, gr. to A. Smollett, Esq., Cameron House, Dumbarton, was placed 1st with long loose bunches, but good berries, and fairly finished. Mr. Fowler was 2d with much more handsome bunches, but evidently hurried into color; and the Rev. Mr. Bushby. The Parsonage, Dalkeith, was the 3d, with very compact handsome bunches, not much, if any, inferior in point of finish and excellence to the other two. Mr. Mitchell, Hamilton, Mr. Alexander Anderson, gr. to J. T. Pringle, Esq., Torwoodlee, and Mr. Alexander Forbes, Callender House, had also capital bunches, but unripe. For the two best Black Hamburg Mr. Meredith distanced all competitors with such samples as had never been seen in Edinburgh before, and not the slightest way rubbed or injured in bloom. The same remark applies to Mr. Hill, of Keele Hall, who was second; but the other exhibitors have evidently something to learn in the way of packing and putting up for competition, as all their fruit was more or less rubbed, although not coming a quarter of the distance that those just mentioned did. Mr. Fowler was 3d. The same gentlemen carried off prizes for the best bunch, with the exception of Mr. Fowler, who was not placed, Mr. Temple being 3d in his stead. Mr. Alex. Foggo, gr. to Wm. Forbes, Esq., Callender House; Mr. Mitchell; Mr. James Matheson, gr. to the Hon. Mrs. Ramsay, Burnton; Mr. Morrison, gr. to Capt. Arbuthnot, Inchmartine; and Mr. Turner, gr. to Mark Sprott, Esq., had creditable examples. In the best Muscat Hamburg, Mr. Turner had much the smallest bunch, but the berries were the largest in the room; indeed it would be difficult to match them either for size or finish, but the bunches had been thinned too much to be handsome. Mr. Morrison was 2d, with a badly carried lot; and Mr. Fowler 3d, with his immense bunches; but the judges rightly preferred finish to size, however Brobdignagian

they might be grown. For a sample of the true Tokay, Mr. Meredith was 1st, but it seems a pity to encourage so tasteless and so insipid a grape. Mr. Matheson was 2d with a variety, but considered by some not to be true. Black Alicante was only shown by Mr. George Young, gr. to J. Meiklejohn, Esq., Westland House, Dalkeith, but it was a splendid example, and the bloom all that could be desired, being very carefully handled.

For the best-flavored White, Mr. Thompson's Duchess of Buccleugh was again in the ascendant, triumphantly carrying 1st and 2d prizes against a most splendid example of the Muscat of Alexandria. Mr. Neil Black, gr. to Major-General Ramsay, Dalhousie, and Mr. Mitchell were placed in the order they are named, although most practical men thought the prizes should have been reversed. Mr. A. Anderson, Torwoodlie, was 3d. For the best-flavored Black, Muscat Hamburg triumphed in all three instances, Mr. Laing 1st, Mr. D. Morrison 2d, and Mr. Fowler 3d. The highest colored of these took the best position, but a higher colored than either of the three, from Mr. Turner, was considered deficient in flavor, so that color in this instance was not an unexceptionable test. For the finest-bloomed sample in the room, Mr. Meiklejohn's Alicante was placed in opposition to Mr. Meredith's Hamburg, which we think was a mistake, an opinion shared very generally, although the judges seemed to have been unanimous upon the point. For the best bunch not named in the Schedule, Mr. Fowler was 1st with Trebbiano, not large, but of fine configuration and finish; Mr. Morrison 2d, with a bunch of the Black Morocco character, unnamed; and Mr. Mitchell 3d, with Royal Vineyard.

FLORICULTURAL NOTICES.

GOLDEN TRICOLOR-LEAVED PELARGONIUMS.—Quite a discussion is going on in the English Gardening Journals respecting the origin and growth of Mrs. Pollock and other new variegated pelargoniums (not geraniums, as we call them.)

These tricolor sorts, so remarkable for their striking foliage, green and crimson, and gold, are now attracting increased attention, which they well deserve, for nothing can be more attractive than a superbly grown specimen of Mrs. Pollock, Sunset, and some other of the new sorts, which are originated each year, for all the amateurs and nurserymen are engaged in the production of seedlings and sports, and no exhibition takes place without the tricolor pelargoniums forming a conspicuous feature. We advise our amateurs and nurserymen to devote more attention to this class, which will certainly be more satisfactory than the verbena, for all purposes of bedding, and now that the latter flower is so difficult to manage on account of the rust, it is fortunate that there is a more showy plant to take its place. Not only the golden tricolor-leaved sorts, but the silver-edged kinds, and the nosegays, are equally attractive, and the newer seedlings are such great improvements in the size of the truss, habit of growth, abundantly flowering and variety of colors, that the older sorts are comparatively worthless. With such superb varieties as Stella, Christine, Gen. Grant, and many of Mr. Beaton's seedlings among the zonale kinds, and Mrs. Pollock, Sunset, Pieturata, Princess Alexandra, and others, in the golden, tricolor, and silver-edged kinds, our gardens can be always gay with both brilliant flowers and magnificent foliage.

THE ACHYRANTHES OR IRISENE.—A diversity of opinion has existed among the English cultivators in relation to the value and beauty of this new plant. This somewhat surprised us, as it has, no doubt, many of our readers, who have noticed the articles copied in our pages regarding it. But this surprise has ceased after growing the plants the present year. In the spring, when grown in the house, we thought it a superb plant, and set out large quantities of it, but it grew rather slowly, and at the time of the hot and dry weather in July it lost nearly all its color, and looked dingy and poor enough. We sided with those who condemned it. Now, however, (September 12) it has all, and even more, of the richness and attractiveness of early spring; in fact the plants are one mass of glowing crimson,—stems, petioles, and leaves. The Coleus now has its turn of dingyness. We infer, there-

fore, that it does not like hot and dry weather, and in mid-summer will not appear in its own real beauty—but during the autumn its magnificent leaf tints are brought out, and at that period it quite surpasses the *Coleus*, *Amaranthus*, or any other foliaged plant, adapted to the summer garden. For ribbon gardens this and the *Centaurea*, or *Cineraria maritima*, form distinct lines of richly contrasted foliage.

ERANTHUS RAVENNÆ.—This very tall, graceful, and ornamental grass, is quite equal, in habit of growth and general aspect, to the famous Pampas grass. It has not the silvery flowers of that fine grass, but it has an erect and stately growth, reaching the height of eight or ten feet, and the outer leaves fall gracefully to the ground. It is also quite hardy, and may be grown in any garden where there is a few feet of ground. For groups on the lawn it is a grand object.

THE NEW CLEMATISES which we recently noticed are stated to have one quality, and that, by which they far surpass the ordinary varieties of *C. lanuginosa*, is the quality of continuous flowering. Through the month of August they present masses of magnificent blossoms, and they continue branching and blooming on freely till arrested by the ungenial weather, or frosts of autumn. Shades of blue-purple and of reddish-purple, in considerable variety, predominate in the original batch of seedlings, but there are some very desirable forms of a paler or lilac tint. The size and profusion of the flowers in the older established plants is astonishing.

NEW HYBRID PELARGONIUM.—Messrs. E. G. Henderson & Son were awarded a first-class certificate for a Hybrid Pelargonium, with scented leaves and flowers, greatly superior to those usually found in the fragrant section of this genus. It was considered a great step in the right direction, and would no doubt be the beginning of a race of pelargoniums which would prove to be great acquisitions.

907. AZALEA REINE DES PAYS BAS. Garden Hybrid.

Illustration Horticole, 1868, pl. 479.

This is one of the many beautiful seedling azaleas raised by the Belgian florists, who have been so enthusiastic in the culture of this flower. It is a fine acquisition. The flowers

are very large, of a soft rose, changing to white towards the edges, and the upper petals are boldly and distinctly spotted with bright scarlet; these spots are thickest on the central or upper lobe, and less numerous on the other two. In this respect it is unlike any previous kind, the spotting being more generally diffused over the flower. It was raised by M. Maenhout, and received a prize at the International Exposition at Amsterdam. (*Ill. Hort.*)

908. PHORMIUM TENAX FOL. VARIEGATIS. VARIEGATED-LEAVED NEW ZEALAND FLAX. (Asphodelaceæ.) New Zealand.

A greenhouse plant; growing 3 feet high; with variegated foliage; increased by division of the roots; grown in strong rich soil. Illustration Horticole, 1866, pl 481.

This is a variegated-leaved variety of the *Phormium tenax*, a plant not often seen in our collections, but every way worthy of a place, not only for its ornament in winter, but for the summer decoration of the lawn. The foliage is not unlike in shape some of the *Iris*, but of a thick fleshy, shiny green, and much more elongated, the ends gracefully recurved. The present variety is precisely like it in habit, and only differs in having the foliage distinctly striped with yellow, and margined with red. As an ornamental plant for the conservatory it ranks with the variegated-leaved *Azaleas* and *Yuccas*, and will succeed admirably in any cool house in winter, and in the open air in summer. (*Ill. Hort.*, June.)

S E D U M F A B A R I U M .

BY THE EDITOR.

THE Sedums are an extensive class of plants, and most of them, though of low stature, are very ornamental. Some are old and familiar, and have long been used as edgings to flower borders.

The most showy of the species has been the *S. Sieboldii*, which not only has a beautiful spreading habit, with pretty rounded fleshy foliage, but is loaded with a profusion of clusters of pinkish flowers, well adapted, from its slender habit of growth, for hanging baskets.

The variety now under notice, *S. fabarium*, (FIG. 14, reduced to one-twelfth its natural size) is one of the most showy of the group. The leaves are not only very large, but the growth strong, and more upright, and every shoot is terminated by a large and dense umbel of pale pink flowers, which appear in August and September.



14. *SEDUM FABARIUM*.

The origin of the plant is not known. It was raised from seeds a few years ago, around London, and it was not known that it would prove hardy in our climate. It is, however, just as hardy as the *S. Sieboldii*, and consequently proves to be one of our most showy autumnal flowering herbaceous perennials.

As a plant for pot culture it is also conspicuous. We have now in full bloom quite a number of plants, and the large, pale green fleshy foliage is admirably set off by the profusion of its pretty pink flowers. We can commend it as one of the best of our hardy plants.

G A R D E N G O S S I P .

RESIDENCE OF J. F. C. HYDE, ESQ., NEWTON CENTRE.— Among those who have given their attention to the culture of fruit, more particularly of the grape and pear, we may name Mr. J. F. C. Hyde, whose grounds are situated at Newton Centre, immediately upon the Charles River Branch Railroad. Until very recently Mr. Hyde has been engaged in the culti-

vation and sale of fruit-trees, &c., but has relinquished it mainly on account of other business engagements, and has transformed his grounds into a vineyard and pear orchard, devoting his leisure hours, though they are few, to their management.

The grounds comprise about six acres, and form a gradual slope on all sides, from the somewhat elevated centre, thus making it a favorable spot for the vine. The most elevated part, a small spot, just in the rear of the house, is a rocky formation, and still reserved as it was when Mr. Hyde became the owner, with the native growth, which has been taken advantage of, and forms a pretty feature of the place. The grounds form nearly a square. On the right of the house is the pear orchard, containing five or six hundred trees, and about one hundred varieties. These have been planted only six years, but by purchasing large old healthy trees of ordinary sorts, and grafting the tops with approved kinds, the orchard has the vigor as well as the appearance of those planted twenty years, some of the trees bearing a bushel or more of pears. Among the newer sorts, which Mr. Hyde is testing, we noticed the Goodale, (described in our last volume) Wellington, Tudor, Rogers, and other kinds, which promise to become valuable additions to our collection. Among the old sorts, and, in fact, very old, but yet one of the best, we noticed six or eight fine Fultons, which grow admirably in Mr. Hyde's soil. The Sheldon, Edmonds, Doyenné du Comice, and other fine kinds, were all in bearing. We predict that, with care, Mr. Hyde will have one of the most thriving pear orchards in our vicinity.

The vineyard is planted on the ground descending to the railroad in the rear. It is a hungry, stony, gravelly soil, so poor that it was never deemed capable of growing a crop of corn. Here the first vines were planted, three years ago, and they are now bearing a heavy crop—full heavy enough. They are mostly Concord and Hartford Prolific, the latter just beginning to ripen. All are planted about six feet apart, each way, and trained to cedar posts, six or seven feet high. Mr. Hyde, like ourselves, is an advocate for manure for the grape, and he pointed out to us vines that were manured,

and others which had not received any manure. The difference was perceptible almost as far as the vines could be seen. As to ripeness of the fruit there was no perceptible difference. The ground was not trenched or ploughed, only spaded up thoroughly.

Passing on, and returning on the left side of the house, we came first to a new plantation of vines, made this year. These included the Iona, Israella, and Concord. The Concord was growing vigorously, but the others poorly, probably from the weakness of the vines. All are planted the same distance as the others, and trained to cedar posts. Near this plantation was a small lot of vines, planted at the same time as those we first referred to, but, instead of being trained to stakes, these are trained to a wire-trellis, which Mr. Hyde does not like, and prefers the cedar posts, as being cheaper, and easier to manage. This plantation contained many other sorts; one was the Iona, which was in bearing, and quite a number of vines of the Creveling, which does well, bears good crops, of good bunches, and a brisk and excellent grape, just beginning to ripen. Here, also, we saw Allen's Hybrid, which requires better treatment than the Concord, but is a fine grape. Several of Rogers's Seedlings, and the Mary Ann, a small black grape, nearly ripe, but wanting in size and quality. The Delaware growing and bearing abundantly. We noticed very little mildew upon any of the vines.

The whole number of vines planted by Mr. Hyde is 1700, the main stock the Concord, which so far appears the easiest to grow and the most profitable to raise. Hartford Prolific does well, but it has that fatality of dropping from the bunch, which prevents it from being valuable; otherwise, it is a good, early grape.

We were highly gratified at the general appearance of Mr. Hyde's vines, and do not doubt he will find it a pleasant as well as successful investment. A good cultivator, and familiar with all the leading varieties of grapes, he will be able to fully try the experiment of vine culture, on a somewhat extended scale, and ascertain the comparative value of the kinds we have enumerated for general cultivation. We only wish that many more of the waste acres of land in the

suburbs of our city were devoted to grape and pear culture, that the market might be more abundantly supplied with the best fruits, particularly the grape. Mr. Hyde's example and success should stimulate others to similar efforts.

GARDEN OF HON. M. P. WILDER, DORCHESTER.—A recent visit to the garden of Mr. Wilder, in company with several pomologists and friends of horticultural science, gave us the opportunity of looking over the collection of pear trees which has received his especial attention for so long a period. The occasion was rendered more pleasant from the presence of Mr. C. Downing of Newburg, and Mr. Thomas of Macedon, N. Y. The inspection of the large quantity of trees was highly gratifying to them and ourselves, as well as the party of friends assembled at the invitation of Mr. Wilder, who, for four years, until the present season, has been unable to see his friends as in former years. It is highly gratifying to us to record such a marked improvement in Mr. Wilder's health, and we trust he may be fully restored to his former health and activity.

The pear trees were looking well, but the crop is much less than last year. Some sorts are in full bearing, while others have failed. The Buffum, which Mr. Wilder esteems a profitable market pear, and of which we think he stated he had seventy-five bushels last year, is bearing scarcely anything this; but the Beurré d'Anjou, which bore well in 1865, produces a good crop in 1866, showing it to be a uniform bearer.

Among the new and noticeable pears, we saw fine trees of the General Todleben, bearing very large and handsome specimens, nearly equal in size to the Beurré Diel; it is a January pear, and promises to be very valuable. Dana's Admirable was bearing extra-sized specimens of this fine pear. Among the good sorts we saw fine trees of the Howell, Andrews, Sheldon, Merriam, Boston, Beurré Hardy, Swan's Orange, Beurré Superfin, &c. Beurré d'Anjou and Doyenné Boussock are two of the best and most profitable pears cultivated by Col. Wilder. Doyenné du Comice does not appear to flourish so well; the trees seem to want vigor; while in our ground the growth is too rapid; probably the soil may

be too stiff or moist, for we cannot see any defect in it. It stands at the head of the newer pears.

We have not time or space to enumerate the names of the great number of sorts which we examined, many of which are only valuable for their large size and fair quality, which renders them profitable for the market, though not quite up in quality to the standard of excellence. Many of the poorer sorts have been grafted over with Beurré d'Anjou, and only those of good average quality retained. This has not been done till years of time lost in giving them a fair trial, and they have been found too worthless to be retained.

Of the Rogers grapes Col. Wilder has several vines trained to a wire trellis, which were looking very well, and some of them nearly or quite ripe. Those most valuable were Nos. 3, 4, 9, 15, 19, 32, 41, and 43, but Nos. 4 and 15 represent the character of Mr. Rogers's grapes so fully that we need not particularize. No. 9 is earlier than No. 15. All appeared vigorous, and free from mildew.

After the rounds of the pear orchard we inspected Col. Wilder's Seedling Japan lilies, of which he has quite a large collection. Among them are several of the tint of *L. punctatum*, and also many pure white, all raised from various impregnations. The beds made a fine show. A row of Seedling gladiolus was a remarkably good variety of colors.

The fine collection of camellias appeared in excellent condition, and the large old plants were studded with flower buds.

It is gratifying to record the renewed zeal of Col. Wilder in everything pertaining to horticulture, and we hope his health may be restored and his life of usefulness prolonged.

Massachusetts Horticultural Society.

September 1, 1866.—The adjourned meeting of the Society was held to-day,—the President in the chair.

There not being a quorum present the meeting was adjourned one week, to September 8.

September 8.—The adjourned meeting of the Society was held to-day,—the President in the chair.

The Committee, to whom was referred the subject of the nomination of a Treasurer, reported that they had received from the late incumbent, Capt. Austin, all the moneys and evidences of property of the Society, and transferred them to the hands of the new Treasurer, and that they recommend he be paid, for the faithful performance of his duties, \$600. Unanimously accepted.

The President read the following letter from H. H. Hunnewell, Esq.:

Wellesley, August 31, 1866.

C. M. Hovey, Esq., President of the Massachusetts Horticultural Society.

Dear Sir:

In the hopes of encouraging the cultivation of the rose in our community, and of increasing the attractions of your Society's exhibitions, I am induced to ask your acceptance of the enclosed check for \$260, which you will please appropriate in special prizes, to be awarded, at the discretion of your Flower Committee, at your Annual Rose Show, in June, 1868, in the following manner:

For best collection 40 varieties Hardy Perpetuals,	\$40
" 30 " " " 	25
" 20 " " " 	15
" 10 " Moss,	15
For best general display of all kinds of pot and cut flowers, . .	50
2d " " " " " 	30
3d " " " " " 	20
For six best specimens pot culture,	50
For best basket, or vase,	15

In order that cultivators, who may be inclined to compete for these prizes, should have sufficient time to grow their plants, I would suggest that public notice be given immediately, and that the interest on the amount, in the meantime, be applied to the expense incurred for that purpose. Very truly, yours,

H. H. HUNNEWELL.

On motion of Mr. Wetherell the thanks of the Society were voted to Mr. Hunnewell, for his liberal donation.

The following Committee was chosen by nomination at large, to nominate officers for the ensuing year:—

Jos. Stickney, C. O. Whitmore, Capt. Austin, D. T. Curtis, S. H. Gibbens, E. A. Brackett, and C. H. B. Breck.

THE THIRTY-EIGHTH ANNUAL EXHIBITION OF THE SOCIETY was held on Tuesday, September 22, and continued to Friday evening the 25th. The arrangements were similar to those of the previous year. The lower Hall was devoted to vegetables and apples. The Library Room to grapes, and the large Hall to flowers and plants, and pears. No decorations were needed, as the Halls, in their beautiful proportions and finish did not require any artificial aid. The arrangements were so far changed as to place the plants on the two sides of the Hall, and the stand for cut flowers in the centre, with the two tables for fruit on each side.

The display was one of the best ever made by the Society, and evinced great skill and finish in the growth of the plants; though many of the specimens were not so large as last year, the size was more than made up in the variety and superior growth of the whole.

Unfortunately, the weather was very unfavorable, and the attendance not so large as usual, but the crowd of visitors, on the last day, was the best evidence, that, but for the prevailing storm, the exhibition would have been crowded during the entire four days. We give a brief account of the plants and fruits.

PLANTS IN POTS.—These, as we have said, were remarkable for their growth. Messrs. Hovey & Co. sent 8 caladiums, which were immense in size, vigor, and rich coloring, some of the plants measuring four feet high, and as much in diameter, with leaves eighteen inches long; the kinds were Chantini, Bicolor, Baraquini, Pictum, albapunctatissima, Newmanii, Broigni, artii, and marmorata. The collection of twenty plants comprised the beautiful Bourbon palm (*Latania borbonica*) the Chinese palm, (*Chamærops excelsa*) 8 feet high, the Variegated Aloe-leafed Yucca, *Rhopala corcovadensis*, *Dracæna terminalis*, *Musa Cavendishii*, and *rosacæa* (new), *Dieffenbachia*, a fine large *Achyranthes Verschaffeltii*, *Seaforthia elegans*, &c. A beautiful plant of *Cyperus alternifolius*, and small but fine specimens of *Yucca quadricolor*, *Cordyline indivisa*, *Agave filifera*, and many other variegated plants; also the new, rare, and elegant tricolored Saxifrage, (*S. tricolor*) with red, white, and green leaves, blotched, shaded, and variegated in the most striking manner. Several ferns and Lycopods, including a handsome tree fern (*Alsophila australis*.) From Jona. French came eight or ten Caladiums, the same as those mentioned above, and the fine *Belleymeii*, *Argyrites* and *Wightii* in addition; Crotons; the variegated pine apple; some very large Ferns and other plants. From H. H. Hunnewell, several Ferns and Lycopods, large and well grown, also *Cissus discolor*, and a young plant of the beautiful *Alocasia machoriza variegata*, quite new, its large deep green leaves conspicuously blotched with clear white. Mr. Ames of Chicopee sent a large specimen of the same, which was greatly admired, and will undoubtedly prove a grand acquisition. W. C. Strong sent a collection of small Caladiums, and other plants; and F. Parkman contributed ten hardy variegated-leaved plants, in pots, consisting mostly of Japan Conifers.

BOUQUETS, CUT FLOWERS AND BASKETS were conspicuous ornaments of the exhibition, and attracted much attention. Six immense bouquets, four to six feet high, were contributed by J. Nugent, J. Westgate, and Hovey & Co., two each, and all were put up in good taste. Table and hand bouquets, from the same, and by other contributors, were all very fine specimens of good arrangement. The Cut Flowers were liberally contributed, and the stands kept well filled with a good selection. Conspicuous were those of W. C. Strong, Hovey & Co., J. E. Westgate, and Geo. Craft, the latter having a superb display of Seedling *Gladiolus*, which, owing to the fine season, were never shown with larger spikes or larger flowers. *Tritomas* and *Asters* were prominent flowers in the stands of

Messrs. Strong and Hovey. Messrs. Breck, McTear, O. H. Peck, and others, had handsome displays. Baskets of flowers were a great improvement on previous years, and were got up with less compactness, and were more graceful and natural. Mr. Cruickshank, gardener to George L. Stearns, Esq., sent a fine spike of *Hedychium*, and Hovey & Co. cut flowers of the new Double *Sanvitalia*, which looked just like the *Pomponé Chrysanthemum*.

DAHLIAS were excellent, and Messrs. Flynn of Lawrence, and C. J. Power of Framingham, had many superior specimens, which carried off most of the prizes.

PREMIUMS FOR PLANTS, FLOWERS, &c.

PLANTS IN POTS.—For the best collection of twenty, to Hovey & Co., \$25.

For the next best, to J. French, \$20.

SPECIMEN PLANT.—For the best, to Hovey & Co., for *Cyperus alternifolius*, \$5.

VARIEGATED LEAVED PLANTS.—For the best ten, to Hovey & Co., \$10.

For the next best, to F. Parkman, \$8.

CALADIUMS.—For the best eight, to Jonathan French, \$8.

For the next best, to Hovey & Co., \$5.

FERNS.—For the best twelve, to Jonathan French, \$8.

For the next best, to H. H. Hunnewell, \$6.

For the best six, to Hovey & Co., \$5.

LYCOPODS.—For the best six, to Hovey & Co., \$5.

For the next best, to H. H. Hunnewell, \$3.

BEGONIAS.—For the best six, to H. H. Hunnewell, \$6.

VARIEGATED PLANT.—To H. H. Hunnewell, for *Cissus discolor*, \$5.

For the next, to Hovey & Co., for Variegated *saxafrage*, \$3.

DAHLIAS.—For the best twenty-four, to C. J. Power, \$5.

For the next best, to E. Flynn, \$4.

For the next best, to Hovey & Co., \$3.

CUT FLOWERS.—For the best display, to W. C. Strong, \$16.

For the next best, to Hovey & Co., \$14.

For the next best, to J. E. Westgate, \$12.

For the next best, to F. Parkman, \$10.

For the next best, to J. Breck, \$8.

For the next best, to E. Flynn, \$6.

For the next best, to J. McTear, \$4.

LARGE BOUQUETS.—For the best, to J. Nugent, \$12.

For the next best, to J. E. Westgate, \$10.

PARLOR BOUQUETS.—For the best, to W. C. Strong, \$4.

HAND BOUQUETS.—For the best, to Hovey & Co., \$4.

For the next best, to Thomas Hooper, \$3.

FRUIT.—Notwithstanding the general impression that the pear crop was hardly up to the average, the show of this fruit was large, and nearly or quite equal to last year. Some few sorts were deficient in size and beauty, but the falling off was so slight as hardly to be noticed. Collections were

not admitted, for want of room ; but the place was filled by cultivators, competing for the prizes, no less than eight contending for the best twenty. Bartlett pears were inferior to last year, and the season so far advanced that only six or seven competed for the silver cup, (\$25) which was carried off by A. Dickinson of Cambridgeport, for the largest and handsomest dish. The competition for the single dishes was more extensive, and some very beautiful specimens were put up, among which the Beurré Bosc of Mr. Stickney, the Sheldon and Doyenné du Comice, from Hovey & Co. ; Beurré Hardy, from M. P. Wilder ; Lawrence, from Jesse Haley ; Louise Bonne de Jersey, from J. Eaton, and Merriam, from A. J. Dean, were extra.

Of apples there were many fine specimens, particularly of Washington, Gravenstein, and Hubbardston Nonsuch. Hardy grapes were well represented ; and among the number were Iona, Adirondac, Creveling, Concord, and many of Rogers's Nos. J. W. Bailey of Plattsburg sent some beautiful clusters of the Adirondac, which were much admired, and were riper than any other grapes exhibited. The foreign grapes, though very good, were not up to the style and finish we ought to expect. Some very large Cannon Hall were sent by R. S. Rogers of Danvers, but the black grapes were wanting in size of berry, and had not the deep color and rich bloom which should characterize exhibition fruit. The Golden Hamburg, though good berries, were only moderate sized bunches. Our grape growers are behind other departments of fruit culture.

AWARD OF PREMIUMS FOR FRUITS.

PEARS.—For the best twenty varieties, to Hovey & Co., \$25.

For the next best, to H. Vandine, \$20.

For the next best, to Davis & Bates, \$16.

For the best fifteen varieties, to A. Dickinson, \$15.

For the next best, to Josiah Stickney, \$12.

For the next best, to W. A. Crafts, \$10.

For the best ten varieties, to J. Haley, \$10.

For the next best, to Jas. H. Smith, \$8.

For the next best, to J. C. Park, \$6.

For the best five varieties, to J. Eaton, \$6.

For the next best, to A. Parker, \$5.

For the next best, to J. R. Poor, \$4.

For the best Bartlett, to A. Dickinson, the silver cup, (\$25.)

For the best twelve Bartlett, to J. C. Chase, \$5.

For the best twelve Beurré Bosc, to J. Stickney, \$5.

For the best twelve Seckel, to A. Dickinson, \$5.

For the best twelve Swan's Orange, to F. & L. Clapp, \$5.

For the best twelve Louise Bonne, to J. Eaton, \$5.

For the best twelve Urbaniste, to H. Partridge, \$5.

For the best twelve Duchesse, to R. L. Saville, \$5.

For the best twelve Beurré Diel, to W. Butterfield, \$5.

For the best twelve Beurré d'Anjou, to J. R. Poor, \$5.

For the best twelve Sheldon, to Hovey & Co., \$5.

For the best twelve Glout Morceau, to A. Dickinson, \$5.

For the best twelve Doyenné du Comice, to Hovey & Co., \$5.

For the best twelve Lawrence, to J. Haley, \$5.

For the best twelve Marie Louise, to C. C. Dike, \$5.

For the best twelve Belle Lucrative, to A. Dickinson, \$5.

For the best twelve Merriam, to A. J. Dean, \$5.

For the best twelve Winter Nelis, to Andrew McDermot, \$5.

For the best twelve Dana's Hovey, to F. Dana, \$5.

For the best twelve of any other variety, to F. & L. Clapp, for Clapp's Favorite, \$5.

APPLES.—For the best twenty varieties, to F. & L. Clapp, \$20.

For the next best, to A. Clement, \$15.

GRAPES, (Native.)—For the best six bunches of Diana, to F. Dana, \$4.

For the best Delaware, to W. Miller, \$4.

For the best Isabella, to C. E. Grant, \$4.

For the best Concord, to J. B. Moore, \$4.

For the best Hartford Prolific, to W. C. Strong, \$4.

For the second best collection, of ten varieties, to Davis & Bates, \$10.

GRAPES, (Foreign.)—For the best six varieties, two bunches each, to Mrs. F. B. Durfee, \$10.

For the next best, to R. W. Turner, \$8.

For the best three bunches of Black Hamburg, to H. S. Mansfield, \$5.

For the next best, to R. W. Turner, \$4.

For the best other black variety, to Mrs. T. W. Ward, for Wilmot's Black Hamburg, \$5.

For the next best, to R. S. Rogers, for Barbarossa, \$4.

For the best White Muscat, to R. S. Rogers, for Cannon Hall, \$5.

For the same, to M. H. Simpson, for Cannon Hall, \$4.

For the best other white sorts, to J. Pierce, for White Frontignan, \$5.

For the best two varieties, two bunches each, to R. W. Turner, \$5.

For the next best, to G. W. Harding, \$4.

For the next best, to Mrs. F. B. Durfee, \$3.

For the next best, to Davis & Bates, \$1.

Gratuities were awarded for fruits and flowers, but the list is too long for our space.

VEGETABLES.—The show of these was most remarkable. They have always been good, but this year the display far excelled any previous one. The season has been favorable, but even this would not make up for the superiority of the specimens; evidently there has been more skill in culture shown, or a much better selection of the varieties made. We cannot particularize the numerous articles, but we must not omit to notice the Cauliflowers, which obtained the silver cup. This was carried off by Mr. Smith of Newton, but the second was so nearly equal that the Committee made the prize equal, and awarded another silver cup; these were from J. S. Converse of West Cambridge. The Tilden tomatoes, from Hovey & Co., C. N. Brackett, J. L. D'Wolf and others, were splendid specimens of this valuable kind. Hovey & Co. exhibited the new Black Pekin Eggs,

which promise to be a valuable acquisition; they are quite round, black purple, and very handsome. Three Marblehead Mammoth Cabbages, from Seth Hathaway, weighed, respectively, 31, 35, and 37 lbs. each, and one large one, weighing 40 lbs. C. W. Gleason sent 75 varieties of potato. Hubbard and Marrow squashes, beets, carrots, &c., were of the greatest merit, as regards both size and form. We only regret our inability to enumerate more, or give a list of the prizes.

Horticultural Operations

FOR OCTOBER.

FRUIT DEPARTMENT.

SEPTEMBER has been a cool and somewhat rainy month, and nothing has suffered from want of moisture. Trees never made a better or more vigorous growth, and a warm October will augur a fruitful season in 1867.

VINES, in the early forced houses, will soon begin to grow, and at this season will require much attention. Syringe morning and evening, until all the buds are well broken, and begin to show their embryo clusters. Maintain a good warmth in dull or cool weather, but be careful not to keep up a high night temperature. Keep the border protected from cold rains as the season advances, by a covering of coarse litter. Vines, in the grapery or greenhouse, will require no other care than to secure thoroughly ripened wood, by liberal quantities of air. Vines in cold houses, as soon as the grapes are cut, should be aired night and day, in good weather, so as to be ready for pruning next month. Hardy vines may be pruned after two or three severe frosts.

STRAWBERRY BEDS should be cleared of all large weeds, and new plantations have an occasional hoeing, if the weather continues favorable. Ground may be prepared for spring planting.

ORCHARD-HOUSE TREES should be well protected from severe cold rains, and kept rather dry, so as to well ripen the wood. Keep them in a warm, sunny situation.

CURRENTS AND GOOSEBERRIES may be transplanted.

PEAR-TREES may be removed as soon as the leaves fall. Manure and top dress old plantations. Scrape, wash, and clean the trees, if they require it.

INSECTS should be looked after. See that the canker worm grub is prevented from ascending the trees.

FLOWER DEPARTMENT.

The cooler weather of October reminds the gardener of coming frosts, and everything not housed should be well protected in frames, with the means of covering, to make all safe in a cold night; for many plants are so much improved by keeping them out as long as possible (unless wanted

for early blooming) that it is an object to do so; they soon get drawn up in the house. Now will be the time to proceed with the completion of the fall planting, putting out the lilies, hyacinths, tulips, crocuses, and other bulbs, and replanting herbaceous plants. The whole of October is the period, and it is usually fine enough to finish it before the ground is wet and frosty.

CAMELLIAS are now all housed, and should be kept cool, and occasionally syringed, and watered moderately.

PELARGONIUMS, potted last month, will now begin to grow finely, and should be kept quite cool, and near the glass. Give abundance of air.

AZALEAS, wanted for early flowering, should be taken into a warm house; those for late flowering, should be kept as cool as possible. Water carefully. Tie the plants into shape, as leisure will permit.

CHRYSANTHEMUMS should be liberally watered, using liquid manure.

CALLAS should have plenty of water.

CINERARIAS AND CALCEOLARIAS should have a good place on a cool shelf, near the glass.

OXALIS AND IXIAS should be potted, using light, rich soil.

SOILS for winter and spring use should be stored up.

CHINESE PRIMROSES should have a cool, airy place, near the glass.

PANSY SEEDS may be sown now, for early spring flowering.

VIOLETS should be potted now, for flowering in the house, or in frames.

CALADIUMS should be dried off, and kept in a warm place, *quite dry*, till March.

CUTTINGS OF GERANIUMS, VERBENAS, &c., put in some time ago, may be potted off.

CYCLAMENS should be potted.

HYACINTHS, and other bulbs, for early blooming in the house, should now be potted and placed in a cold frame.

ROSES planted in the open ground should be taken up and potted and placed in a frame.

FERNS should be more sparingly watered as they cease growing.

DAISIES for blooming in the house should be potted.

FLOWER GARDEN AND SHRUBBERY.

As long as the weather is fine the lawn should be kept smooth, and the walks raked and rolled, sweeping up all falling leaves.

BULBS of all kinds may be planted now.

LILIES should be taken up and reset, unless planted last year, as once in two years is often enough to replant.

DAISIES should be set out in frames, where they can be protected with a covering of boards or sashes.

GLADIOLUS should be taken up.

DAHLIAS should be taken up before severe frosts.

CARNATIONS should be removed to frames.

HALF-HARDY PLANTS of many kinds should be protected in frames with a covering of leaves.

R H O D O D E N D R O N S .

NOTWITHSTANDING the rhododendron is a native of our own country, and is found growing, from Maine to Georgia, in a variety of localities—often, apparently, on the leanest and most unfavorable soil, on steep declivities, amid rocks and gravel—and at others in the rich debris of decaying leaves and roots, in the most sheltered situations—flourishing with vigor in each,—yet, under many conditions of culture, it fails to assume the luxurious aspect which it exhibits in its native habitats, and often dwindles away, until at last it dies outright. In clay or limestone soils it does not find a congenial home, but in every variety of sandy or peaty earth, alluvial, or even boggy soil, it grows freely, and blooms in profusion. *R. catawbiense*, and its progeny, suffers where the soil is too wet, especially in winter ; but the *R. maximum* loves moisture, and flourishes in shady morasses, as in Medfield, Mass., where immense bushes, ten to twenty feet high, cover an extensive swamp.

Two things are therefore requisite in the successful culture of the rhododendron, viz., a loose sandy, or peaty soil, and a situation rather moist than dry. If they have these, other treatment being right, they will grow readily and flower in the greatest profusion. They are very sensitive to strong currents of air, and a single plant, standing in a windy locality, will rarely, if ever, form a handsome specimen. The constant action of the leaves seems to destroy them, and they either become discolored, or fall off, leaving only the leafless shoots. Shelter of some kind is important to perfect success. In large plantations the plants shelter each other, and no artificial aid is necessary ; but, when standing alone, the place should not be too exposed. When, therefore, the soil is good, the location moist, and the locality favorable, the rhododendron becomes the most magnificent of all hardy shrubs.

The “American garden” has long been a peculiar feature

of the pleasure grounds of Great Britain, in which the rhododendron, azalea, kalmia, and other of our native plants, are grown in quantity and perfection, and we had supposed that generally these plants were very extensively cultivated there; yet, it appears this is not so, for a writer, recently alluding to the culture of rhododendrons, says, "it is our conviction that these fine shrubs are not yet sufficiently appreciated. Notwithstanding the annual shows in the metropolis, the practical knowledge of rhododendrons is, in the main, confined to certain nurserymen, who make them a specialty, and to amateurs, who delight in their culture." It is so here, only in a greater degree, for as yet only a few have commenced their growth, and they are almost unknown to collections. But they are becoming better known, and more highly appreciated, and with a better knowledge of their growth will be extensively introduced into our gardens.

The proper soil for rhododendrons has been a subject of much discussion in the gardening journals, and a variety of opinions have been given—some maintaining that peat is essential—others that it is not; and no doubt with truth, just as we have stated, that they often grow naturally where there is no peat. But it appears to be admitted that a soil of loose texture, and largely composed of vegetable matter, in which the hair-like rootlets may extend, is indispensable; and if to these are added moderate moisture, but not stagnant water, the real requisites of success are fulfilled. In our warm climate, and under our June sun, without moisture the flowers fade so quickly that the beauty of a plant is too evanescent.

Our collection of these superb shrubs increases in vigor and beauty every year, and they appear to require less care than almost any other shrub; indeed, it would seem impossible for anybody to fail in their cultivation, if good plants are obtained; yet we know that amateurs have failed to secure the same results. This failure has led us to look into the cause; and our conclusions are, that the want of proper soil, and favorable location, have been the principal causes of failure. One amateur, who planted a quantity in groups, in a peaty soil, informs us that his plants have made the most

healthy and vigorous growth, and flowered magnificently. Another, that he planted his singly, with some peat, but after a year or two of straggling growth they had about given out. In the former instance they had protection from each other, and the roots were shaded and moist; in the latter the plants were exposed on all sides, and the earth dried and heated by the sun.

In addition to proper soil and suitable location, winter protection is also important; not protection to the branches, for the hardy sorts are as hardy as an oak—but protection to the roots, by covering the soil with three or four inches of leaves, in November, which prevents the winter frost from penetrating the ground, and affords the plants the means of supplying themselves with moisture in the most trying time—in March—when root action will enable them to regain that which they lose so rapidly by the drying winds of early spring.

It has been stated, and the idea is common, that the rhododendron will not flourish in the sun; but this is not true. It is true that the flowers will last longer in a partial shade, but that the plants will be any more, or even as vigorous as they will in the sun, is a mistake. In England the finer rhododendrons must be grown in the sun, or the wood will not ripen and perfect the flower buds; and the fact, that rhododendrons never looked better, or flowered more freely than they have the last two dry and hot summers, proves this. They do not need as much sun in our climate as under the duller sky of Great Britain, but the sun does not injure them, and the fear that they will not grow in a sunny exposure is groundless.

We wish to see these grand shrubs universally cultivated; and all who would know on how thin a soil they will thrive, can see this exemplified in the beautiful grounds of Mr. Hunnewell at Wellesley, or in a slightly richer one in our collection. We have time and again given directions in regard to the preparation of soil—the most important item in their growth—but to add to what we have already said in regard to its importance, we copy the following from the *Gardeners' Chronicle*:—

Our observations this year have convinced us of the great superiority of soil largely composed of peat earth for the growth of rhododendrons. It is usual for nurserymen to affirm that this shrub will grow well enough in any light soil of a loose or sandy texture. Most of their nurseries are of this description; and it is natural for them to maintain that what is sufficient for propagation is good for growth. It is true, that rhododendrons will grow, in a way, in any light soil, containing abundance of vegetable matter as one of its elements. There is, however, all the difference in the world between plants that barely live after a stunted fashion, and plants that grow like willows, and are covered annually with numerous showers of blossom. Amateurs who can procure peat earth, are strongly recommended to avail themselves of it. If they reside near a railway, they will probably have little difficulty in obtaining, say five or six truck loads of it, which may be equal to twenty or twenty-five cart-loads. Let them chop it small or break it well with a coarse rake, but not screen it. Let them add an equal quantity of well rotted leaf mould free from sticks, with a sufficiency of sharp sand. That will give sixty to seventy cart-loads of compost to begin with. If the original soil of the gardens is clayey or chalky it should be excavated to the depth of twelve or eighteen inches, as the grower can afford it, and a layer of the compost put in its place. It is often injurious to mix any of the old soil. After the rhododendrons have been planted they will be benefited by a strong mulching from a decayed hotbed; and the process may be repeated with good effects for several years.

In reference to the use of peat—so very desirable—a correspondent of the same journal remarks, that there are two very distinct kinds of soil, to which, in common parlance, the term peat is applied, and inquires which kind of peat is recommended? These two sorts are the heath or moor soil, and the black soil found in swamps. Strictly speaking the first can hardly be called peat, and by way of distinction is known as heath soil. The other sort, or swamp peat, the kind recommended, is thus described:—

Peat, pure and simple, is to be obtained from morasses or peat-bogs, in a great variety of situations. Its mechanical

texture is extremely diversified, sometimes being not unlike gravel, as in the many Irish bogs, and sometimes almost as hard and horny as lignite, when it has been dried and subjected to compression. Its best form is found in the top-layer of a common peat-bog, where fuel is cut, and which has been partially dried. As it holds in suspension a considerable portion of tannin, and sometimes showing traces of iron, it is useful to expose it for a time to the action of the atmosphere, and it should be largely diluted with sharp sand and well-rotted leaf mould. A third of each in bulk may be used, and this has the advantage of increasing the amount of the material. It should be carefully chopped or broken in the compost yard, and duly mixed with the other materials before it is placed in the beds where it is to remain. Peat that has been drained, and that remains *in situ*, is much benefited by the addition of sand and vegetable mould recommended above. It requires careful manipulation. The adjacent soil is often clayey, and should not be mixed up with it. We have seen a fine bed of valuable peat completely ruined in this way. The drainage should be made as complete as possible, and the peaty material, while kept free from loam, should be largely treated with sand.

We are informed by a distinguished Scottish amateur in rhododendrons—a man possessed of both eyes and hands—that there are great differences in land in respect to the growth of this plant. In some soils rhododendrons will scarcely put out a fibre in twelve months, in others they will be surrounded with a matting of roots, like a log, in half that time. He has found clean, sharp, wet sand to be the best. We have frequently used, with good effect, pulverized white or gray sandstone. Yellow sandstone is found injurious, from the iron it contains. Calcareous sand, whether from rock or pit, should, if possible, be avoided.

Such is the advice of English amateur cultivators of the rhododendron, as regards the best soil, and its preparation. And perhaps, after this, it would be useless to deny that peaty earth is highly beneficial to the plants, especially when young. This, however, is no bar to the general introduction

of the plants into our gardens ; for there is scarcely a town, or county in New England, or perhaps in the United States, which does not contain an abundance of peat, which can be cheaply obtained ; in fact it is the cheapest material to be had. Sand too is abundant and cheap. Leaf mould is not so readily obtained, but its equivalent, in the form of decayed weeds, small brush, &c., rotted into a friable mass, is not difficult to get. If, therefore, the soil is not suitable, it can be made so at light cost, for a few loads of the above materials will be sufficient for a good collection of plants. Even at great expense, none who have the means can employ them more advantageously, or be more amply remunerated for their labor. A vigorous and healthy plantation of these truly regal shrubs, will prove a never failing source of gratification and delight.

ON THE PLANTING OF SHADE TREES.

IF we could manufacture a tree of any kind, as we build a house, by money, labor and skill, the comparative cost of the different species would be in most cases the principal consideration. There would be but little dispute about the relative beauty of trees. Those possessing the finest wood, the finest foliage and the handsomest spread of the branches, would be chosen, and constructed according to order. But under the present system of nature, we are obliged to plant or to transplant our trees, and wait for their slow growth from seedlings or saplings to perfect standards. As we are obliged to wait so long for them it is particularly important when we plant, that we should choose the most valuable species ; for if a bad mistake should be made, years must pass before it could be remedied. A great many points, therefore, must be considered before we plant ; and one of the greatest importance is quickness of growth.

In most cases when a man builds a house, the building lot is wanting in trees, or the trees are not of the right sort, or they are imperfect individuals, or they are in the wrong

places. When the builder locates his house in the midst of a natural wood he finds trees "ready made," but they are invariably poorly formed individuals, answering a good purpose until better trees can be planted and grown to take their places. A wood near your house, made up of such trees, is just as valuable as if the trees were perfect in their growth and dimensions. But one of these slender trees standing alone makes but a sorry figure, divested of most of its lateral branches, and having only a very imperfectly developed head, yet they are not to be despised, because they can be used as the nurses of younger trees.

Whatever may be the situation, therefore, unless your new house is to be built on the site of an old homestead, trees must be planted, and you would naturally inquire what species ought to be selected. If your location is entirely wanting in trees, quickness of growth is a very important consideration, but if the place contains a few trees, it is advisable to select the handsomest and most durable species, because your necessity is not sufficient to make it wise to sacrifice truly valuable points to an inferior one. Supposing there is a necessity for covering the place with trees as quickly as possible, you must plant the poplar, selecting the larger native species, such as the *P. grandidentata*, *P. caudicans*, or *P. balsamifera*. There is no known species that will make more wood in a very limited number of years than these different species of the poplar.

But after you have obtained your poplars you will discover that they are not very desirable trees. Though they all emit an agreeable balsamic odor, and have a lively tremulous foliage, they produce thousands of suckers from their roots and spread them over your grounds, almost spoiling your lawn or your garden. Hence when you plant poplars, let them be used to serve the purpose of shade until more valuable, slow-growing and hardwooded trees can be raised. Then the poplar should be sacrificed to make room for finer sorts. Every year we witness this process. Thousands of poplars are annually cut down in our villages, after they have fulfilled their destiny, by acting as nurse to the slow growers.

(To be continued.)

ARBORICULTURAL NOTICES.

SINCE our last account of hardy trees and shrubs, quite a number of new varieties have been brought to notice, a few of which we now particularize:—

GOLDEN VARIEGATED WASHINGTONIA.—This is an accidental seedling, which originated in Ireland, where the original tree is growing, in the Lough nurseries at Cork. The parent tree is twelve feet high, and in great beauty, though thousands of shoots have been taken off for propagation. It has made a pure golden leader, and every part of the tree is finely marked with the same, presenting a most beautiful appearance, and tourists are invited to see it.

VARIEGATED IRISH YEW.—This is a new variety, and the exact type of the Irish Yew, with the foliage of the same color as the old Golden Yew, and forms a most attractive and really beautiful plant. It was exhibited at the Royal Horticultural Society's Show in June, 1863, and obtained a first class certificate, and again at the great International Show, in May last, when it was awarded another first class certificate.

NEW HARDY CLEMATISES.—The Clematis is one of the finest of hardy climbing plants, particularly the large flowered sorts. Great improvements have been made by hybridization, and many beautiful seedlings raised. Two of the last and best are *C. rubella* and *C. Prince of Wales*. *C. rubella* is of a deep velvety claret, the deepest colored clematis yet offered; very distinct, and having the advantage of flowering sixty to seventy per cent. of blooms, with five and six sepals. First class certificate. *C. Prince of Wales*, large flowers, of a deep rich violet purple, with red bars down the centre of each sepal, a decided improvement in *C. rubro violacea*. First class certificate. These, as well as the other new kinds, were raised by Messrs. Jackman & Son, of Noking, Surrey.

VARIEGATED FORSYTHIA.—F. L. Harris, gardener to H. H. Hunnewell, Esq., Wellesley, has sent us specimens of the foliage of a variegated forsythia, an accidental sport, which originated on Mr. Hunnewell's grounds. The leaves are

very distinctly variegated with white, and it promises to be a valuable addition to variegated shrubs of a medium size. Mr. Harris writes to us as follows, accompanying the leaves:—

I send you a few leaves of *Forsythia viridissima variegata*, a *chance sport*, discovered in our grounds. I have several rooted plants of it, and so far it retains its character fully—doubtless it will ultimately prove quite an acquisition. Truly yours, F. L. HARRIS.

SPIRÆA CALLOSA ALBA.—This new white variety of the *Spiræa callosa* has yet been introduced too short a period to show its true character, but enough, however, to see that it will be a great acquisition, being just like the parent, except in color, and forming a pretty contrast with it,—beautiful as it always is. Though most of the spiræas are white, the style and habit of blooming—in large flat cymes—is so different from all the others, that it is distinct and desirable, even in the largest collection.

EXOCHORDA GRANDIFLORA, originally called *Spiræa grandiflora*, described in a former volume, has flowered beautifully the present year, and proves to be one of the hardiest of ornamental shrubs, and one of the most charming objects imaginable. Its habit is neat, its foliage small and pale green, and its large flowers, in short spikes, are of the purest waxy white, unique and exquisite. We should class it second to no other shrub introduced for many years.

THUJOPSIS BOREALIS VARIEGATA.—A pretty variegated variety of the *T. borealis*, which has proved almost or quite as hardy as the arbor vitæ, and one of the finest evergreen trees. *T. borealis variegata* is an acquisition of the Belgian cultivators, and, with the other variegated leaved evergreens, will add increased attractions to this class of beautiful hardy trees.

TOM THUMB ARBOR VITÆ.—This is the name given to a pretty new dwarf variety of the American arbor vitæ which originated in the grounds of Ellwanger & Barry of Rochester, N. Y., and described by them as an acquisition of much value in the class of small hardy evergreens. The parent plant, five years old, is only fifteen inches high, and eighteen broad. For small gardens, and for various ornamental purposes, it will prove very valuable.

VIBURNUM PLICATUM.—This superb variety has been entirely overlooked by amateur lovers of showy shrubs. It is entirely hardy, has a neat and upright habit, and is covered with a profusion of its large clusters of snow white flowers. It should have a place in every collection of handsome flowering shrubs.

PRUNUS TRILOBA.—Recently introduced, and as yet rare in our gardens, but it can claim the first rank. It forms a vigorous medium size shrub, with slightly lobed foliage, and every shoot is covered with large double pink flowers, nearly twice the size of the double flowering almond. It is perfectly hardy.

MAGNOLIA LENNE.—This magnificent variety is yet scarcely known, and has not flowered, that we are aware, only in our own collection. We noticed a fine plant, some time since, in Mr. Hunnewell's grounds, but we did not learn whether it had flowered. It is similar to the *M. Soulangiana* in color, but is more than twice the size, full as large as a tea-cup. It is as hardy as the *conspicua*, of vigorous habit, and promises to be a superb addition to every choice plantation. Few of the magnolias are as yet seen in our gardens, but they all deserve a prominent place.

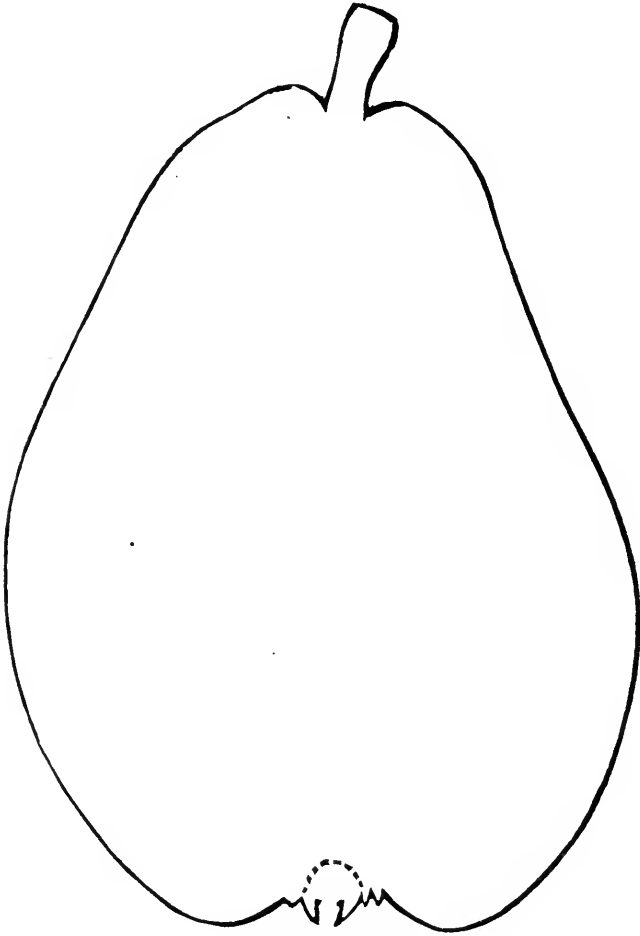
THUJOPSIS DOLABRATA.—This fine Japanese evergreen, as well as the beautiful variegated variety, *T. dolabrata variegata*, has proved perfectly hardy in the collection of F. Parkman, Esq., Jamaica Plain, where it was first introduced. Two plants of it have stood here in an open situation for three winters, without injury, receiving no other protection than that of two or three pine boughs thrust into the earth around them. The past winter proved, in this neighborhood, very fatal to evergreens, and killed black hemlocks and arbor vitæ in abundance; but not a single frond of the *Thujopsis* was even browned. Another plant of the same species stands, in a most thriving condition, on a bed of rhododendrons, where it was planted three years ago, when not above four inches in height. It has never suffered in the least from the winter, and has now reached the height of a foot or more.

Both varieties, the variegated and the plain, seem equally enduring.

THE WELLINGTON PEAR.

BY THE EDITOR.

Two years ago some very handsome specimens of pears were exhibited at the Horticultural Society's rooms, by Mr. Wellington of Braintree, which the Committee, in the absence of the exhibitor, did not recognize, but, as the pears were just in eating, they were tasted by the Committee on Fruit, and found to possess many excellent qualities. Subsequently it was



15. THE WELLINGTON PEAR.

ascertained from Mr. Wellington, that it was the product of a seedling stock which he had set out about ten years previous, and which had then just commenced to bear. He stated to the Committee that he bought a few imported pear stocks, which he planted in his garden, and some of them accidentally

grew up without grafting. This was the first of the number which had fruited, and he thought the pear so good he desired the opinion of the Committee, to determine whether he had over-estimated its merits. The opinion of the Committee, so far as they could judge from a single trial, was favorable, and they thought it well worthy of further trial.

It is a pear (FIG. 15) of good size, resembling somewhat the Beurré d'Anjou, and ripens in November, at a period when there are less good sized showy pears than earlier in the season. Mr. Wellington stated that he would endeavor to bring specimens again for another examination, but although we have not yet seen them we present the following engraving and description of the fruit, and shall report upon them when exhibited again. We consider the pear an addition to our collections, and therefore present this account of it in anticipation of its introduction.

Size, large, about four inches long, and three and a half in diameter: Form, oblong ovate, largest near the middle, rounding off to the crown, which is small, slightly swollen on one side, and obtuse at the stem: Skin, fair, smooth, clear pale yellow, slightly clouded with green: Stem, very short, less than half an inch long, moderately stout, and inserted on the obtuse end, in a scarcely perceptible cavity, formed by uneven projections around it: Eye, medium size, open, and slightly depressed in a small shallow, smooth basin; segments of the calyx very short, stiff, and slightly incurved: Flesh, yellowish white, little coarse, firm yet juicy, melting and exceedingly sweet, with a peculiar aroma: Core, medium size: Seeds, medium size, sharply pointed, but mostly abortive. Ripe in November.

BEDDING OUT.

FROM THE GARDENERS' CHRONICLE.

THE following hints upon bedding out plants, though perhaps too late, or too much in advance of the season, will be more interesting, now that the beauty of the garden—the

gay coloring of the coleus, the iresine, the amaranthus, or the diversified tints of the silver and golden variegated pelargoniums—is fresh in the memory, and a memorandum made of such as have been particularly ornamental, that they may be planted more extensively another year.

Our extract is only a portion of a long paper on bedding out, but it comprises that part of it most useful to amateurs, for whom it was prepared. With the beautiful foliaged plants, the bedding out system is becoming more and more popular, and the garden is rendered attractive, even in unfavorable seasons, when the flowers are parched with heat, or deluged with rain, either alike destroying their beauty. We commend the remarks of the writer to the attention of all lovers of the summer garden:—

The first question is “Where shall the bed be?” strange as it may sound, and altogether superfluous, unto a florist’s ear. “Where?” he will reply, surprised and indignant, “why, of course, where we may see it and enjoy it most—in front of our homes, where, with all its glowing colors, deepened by the dark foliage of solemn trees around, and by the dull rain-fraught clouds above, it may gladden the eyes continually, cheering our hearts like a merry tune, and filling them with thankful love.” And yet in how many sorrowful instances is it otherwise. A large moiety of those who possess a garden seem to think that floriculture is an exercise which, like almsgiving or abstinence should be done in secret, and, on no account whatever to be seen of men. Or rather, I am afraid, they are ashamed of their mild little attachment to the goddess, and therefore visit her clandestinely, and woo her coldly in occult places, behind the leafy screen. Had the mansions of England, speaking generally, any of the attractions of art, architectural beauty, grace of construction, or of exquisite carving in wood and stone, we should be the less astonished at this very dreary mistake; but as a considerable portion of the residences in question are little more, as to their external merits, than genteel barracks and highly civilized barns, requiring every adjunct which might help to break their grim uniformity, and to subdue their ostentatious ugliness.

ness, it is indeed a mystery that their owners should reject such an easy and effective method of adornment. It is depressing to survey the frontage of certain country houses, not infrequent in the land. A broad walk of monotonous gravel, between broad walks of monotonous grass, bounded by massive balustrades of stone! And the approach, through gloomy groves of sad funereal yews, under the shade of melancholy boughs, which imperil our coachman's hat, and suggest to our chastened spirits an impression that we are seated in a mourning coach, and approaching the portals of a mausoleum. Nothing is wanting as to internal arrangement, nothing can be more complete or tasteful than the elegant comfort, of an English home; but it is the immediate vicinity of these habitations which so often makes them doleful, and for which the modern system of gardening, vulgarly known to us as "bedding out," is so especially adapted, dispelling the gloom, and lighting up the scene, as the face of some moody and careworn man brightens and beams with a pleasant smile, when children, joyous and golden-haired, run shouting to the father's knee. The objection, ancient, and soon to be obsolete, is, that the beds are empty for the greater part of the year, "long, and lank, and brown," like the ancient mariner; but the argument is infirm, as I have noted elsewhere. For the money which they give for a pointer, the owners of these houses might purchase a grand collection of bulbs for the beautifying of the beds in spring; and for the price which they pay for a gun, they might have an extensive winter garden, the latter to last for years. I repeat, therefore, let flora be no longer banished to the penal settlement of the kitchen garden, and to "deserts where no men abide," but let the lovely exile be brought back in triumph to the throne which is her royal right.

In the next place, and as regards design, I would strongly recommend simplicity. The multitudinous and intricate partitions of the geometrical draughtsman are extremely clever, and most effective on paper, but they add greatly to the perplexities of "bedding out." Unless they can be developed on a very extensive scale (and I am not writing for very extensive gardeners, who would justly regard me as a

duckling teaching an old drake to swim), they involve a number of small divisions which are ever unsatisfactory. The beds, in my opinion should be always of a sufficient size to exhibit, amply and distinctly, the intended combinations of diverse, or masses of similar colors. Circles, and sections of circles, are the easiest to form and to fill. The walks, whether of grass or gravel, should be broad enough for a crinoline to travel without trespass upon the beds. It is an extremely pretty idea, which our great poet, Tennyson, presents to us, when he speaks of flowers which dipped, and fell, and rose again to look at one of his heroines, making, as it were, an obeisance to her beauty, and kissing the ground on which she trod; but it is an awful reality to watch the heavy folds of some ample dress sweeping down our lovely favorites, and scattering their petals ruthlessly. It is an advantage, moreover, to those, at all events who are constrained to preserve, even in their pleasures, Mrs. Gilpin's "frugal mind," that these simpler designs and wider walks are much more easily operated upon by the mowing machine, and thus economize both work and wage.

The situation selected, and the design laid out, let good soil be put in the beds. It is a common error to be illiberal in this matter, and to fancy because some few of the bedding-out family are extremely vigorous, such, for instance, as the perilla and centaurea, and some of the free-growing pelargoniums, and will thrive, like young gipsies, upon the meanest diet, that starvation is good for the whole community, and that it is wasteful to give old oats and beans to horses that will work upon a diet of hay. But these economists are liable to disappointments. A hot day and a heavy load bring feeble Dobbin to the ground, blemishing his poor knees for life, and a dry summer or a damp as surely deals decay among their flowers as drought fever, and frost ague, among the weakly, outcast, and unfed. Be generous, my brothers, unto both, and their happy smiles of gratitude will make home and garden glad.

And now that our reception rooms are ready, and our new beds duly aired, what guests shall we invite to fill them? I strongly urge upon all young beginners to set their affections,

mainly, upon plants of variegated foliage. They are charming from first to last; charming in their babyhood, forming, as tiny plants, a delightful edging for the conservatory stage; charming on their first introduction to society, as soon as they are bedded out; and charming thenceforth, come storm, come sunshine, through the rest of their bright existence. Theirs is a beauty, which, like that of goodness and intellect in the human face, is brightened by the rains of adversity, and long outlives the transient prettiness of pink cheeks and glossy ringlets. From the windows of the room in which I write, I look upon a garden containing all the principal varieties of plants which are now used in bedding out; and, although some of the pelargoniums, such as Lord Palmerston, Christine, and Trentham Rose, are still attractive, and the lobelias, ageratums, and some of the calceolarias, in bloom, the chief beauty of that garden consists in its colored leaves. All flowers have suffered from the heavy rains, but all foliage is fresh and gay. The former look much as I have seen people look towards the close of the London season. Madame Vaucher is used up completely. The splendid beauty of Stella wanes, and her glowing complexion is (softly be it spoken) spotty. Purple King remains erect and handsome, but he bears, nevertheless, a strong resemblance to some good-looking swell, who is sadly wishing that he had gone to bed instead of to the smoking room when he left her ladyship's ball. The latter, on the contrary, are as full of health and vigor as the Harrow Eleven or the Oxford Eight. Mrs. Pollock (I apologize to the ladies for comparing them to young athletes) does not look a day older than she did at the beginning of the season. Miss Iresine blushes in the sunlight, wearing that untarnished golden chain which adds so much to her beauty. The new chrysanthemum, with its bright yellow leaves, still creates an immense sensation, especially upon amaranthus, with whom she is "keeping company," and who glows with admiration near. *Coleus Verschaffeltii* and *Centaurea candidissima*, *Perilla nankinensis* and *Cineraria maritima*, brunette and blonde, Minna and Brenda, enhance by contrast each the other's charms. The pelargoniums of golden leaf, especially

the Golden Fleece, which, as an outer circle, followed by *Amaranthus*, is the most effective plant in my garden, retain their primal glory; and those with silver variegation, more particularly *Bijou*, *Flower of Spring*, *Manglesii*, *Flag of Truce*, and *Beaton's Silver Nosegay*, are still singing *toujours gai*. And to these I must add, as constant and unfailing ornaments to a garden, the *Cerastium*, the *Santolina*, the *Variiegated Cocksfoot*, the *Ivy-leaved Geranium*, and several of the ivies themselves, the *Orach*, the *Allysum*, the *Golden Sage*, and the *Arabis lucida*. Would that I might include the beautiful *Altermantheras*, which Mr. Bennett of Osberton exhibited at the International, and which I went the other day to see. But the drenching rains had marred their beauty, and though their guardian spoke hopefully of the future, I should have been sadly disappointed were there not so many other attractions in the beautiful gardens of Osberton to interest and delight a florist.

Let us treasure, therefore, and endeavor to increase our precious store of such plants as can resist the vicissitudes of our fickle climate. It is a sore trial and discouragement to see the most brilliant bed in a garden ruined by a night of pouring rain; and the thought of such an ordeal recalls to my mind the following truthful incident. A lady of my acquaintance was sitting in her drawing-room the door of her conservatory, which adjoined, being open. The gardener, an old Yorkshireman, with a famous brogue, was attending, unaware of any other presence, to his plants. A short time before the date of this history a friend had presented to the lady a bulb, of *Tropæolum tricolorum*, at that time held in estimation. Suddenly she heard a start, a growl, and then, in tones of anger irrepressible, "Dom the rots, they've etten *tricolorum*!" My friends, we have all lost our *tricolorum*, and though we have not, I hope, used his violent language, we can think leniently of the wrathful Yorkshireman, congratulating ourselves that our foliage plants defy both wet and vermin.

FLORICULTURAL NOTICES.

NEW VIOLETS.—Two new varieties have been introduced by the English cultivators, which promise to be valuable additions to this favorite class of winter blooming plants. The first is called the **CZAR**; it is a single variety, but possessing unusual vigor and hardiness; the leaves are large, and the flowers are borne on very long footstalks, and are nearly twice as large and sweeter than the old Russian sort. It is so hardy that it continues to bloom from October to May, even during frost, and under the snow. It has been awarded several first-class certificates and prizes.

KING OF VIOLETS.—A very new and beautiful form of the violet. The flowers are very double and rosette like in form, nearly an inch and a half in diameter, delightfully fragrant, and in some soils are casually striped with white; the growth is dwarf and compact. In color it approaches the rich indigo blue of the well-known tree violet, but its individual blossoms are double the size of that variety, and it surpasses all other known kinds by its neatness of growth, profusion and size of flowers, grateful odor, and long-continued succession of bloom.

QUEEN OF THE VIOLETS is an improved variety of the old Double White, larger and better, in every way.

LILIUM NIELGERRICUM has just flowered in our collection, and is a beautiful acquisition. In growth and habit it is somewhat like *L. longiflorum*, but attains the height of four to six feet. The flowers are trumpet shaped, similar to *longiflorum*, but are of a pale yellow or straw color. It is from the Himalaya region, and will probably prove quite hardy. Our own specimen was cultivated in a pot. It blooms at the same time as the Japan lilies.

ZONALE PELARGONIUMS.—All the energies of the English florists appear to be given to the production of new varieties of the tricolor section, like Mrs. Pollock. At the late Exhibitions of the Royal Horticultural Society a great number of new and improved seedlings have been presented and awarded first class certificates. The catalogues will soon be enriched

with a collection of fine growing, free blooming, and magnificent foliaged varieties, to the exclusion of most of those now cultivated. Mr. Grieve, the raiser of Mrs. Pollock and other superb sorts, has an immense number of seedlings, of which the following account is given in the *Gardeners' Chronicle*, in a notice of the grounds of Rev. M. Benyon, which are under the charge of Mr. Grieve:—Right in front of the entrance to the kitchen garden is the gardener's cottage, and on either side of the walk is a broad border of the current year's seedling pelargoniums, which present such a display of new and dazzling beauty that they positively rivet me to the spot. I tried many times in vain to describe, say six of the best of them. It was like choosing the belle out of five hundred young ladies, all characterized by many distinctive features of loveliness. Not that all these seedlings are alike good; but no sooner do you fix upon one of a class as the best, than another starts up to dispute its claim. And that is just what they are here for, as this is Mr. Grieve's great proving ground. Those he considers worthless are treated just like annuals, and thrown away at the end of the season; those that are hopeful are grown on another year; and the decidedly good are of course carefully saved and increased. One of the chief features about them was the uncommonly good quality of their bloom, pinks, cerises and whites largely predominating. Mr. Grieve hopes yet to give us a blue. Leaves were also there, in every variety of color, from purest white to almost any tint of bronze, crimson, yellow, black and green. One had a leaf, brighter, if possible, than Lucy Grieve, and about three times the size. Another had a horseshoe zone, nearly black, with a magnificent truss of sunbeam colored flowers; a third had a yellow leaf, splashed deeply with green, with pure white flowers; a fourth was a golden tricolor, with the finest circular pink flowers; a fifth had a golden margin, bright pink zone, overlaid with dark, almost black, a green disk, and fine white flowers; a sixth, but it is useless to attempt it—suffice it to say that Mr. Grieve has as much, or more for us in the lap of the future as we have yet received from him in the past, and that is saying much.

909. *MECONOPSIS NIPALENSIS* *D. C.* NEPALESE MECONOPSIS.
(Papaveraceæ.) Nepal.

A half-hardy plant; growing three feet high; with yellow flowers; appearing in spring; increased by division of the roots; grown in rich soil. *Bot. Mag.*, 1866, pl. 5585.

A "more stately and beautiful plant," says Dr. Hooker, "can hardly be imagined, except the hollyhock, which it somewhat resembles in miniature." It has a poppy-like foliage, of robust habit, and throws up a flower-stem from two to three feet high, producing terminal spikes of large showy yellow flowers, three or more inches in diameter. It comes from the Himalaya mountains, at an elevation of 10,000 feet, where it grows abundantly. It will be a fine acquisition to half-hardy summer-flowering plants. (*Bot. Mag.*, July.)

910. *LOBELIA NICOTEANÆFOLIA* *Heyne.* TOBACCO-LEAVED LOBELIA. (Lobeliaceæ.) Ceylon.

A greenhouse plant; growing six feet high; with pale lilac flowers; appearing in winter; increased by cuttings; grown in rich soil. *Bot. Mag.*, 1866, pl. 5587.

A conspicuous and showy species, from the Neilgherry mountains, which flowered at Kew last January, and attracted much attention from its striking habit, great height, and profusion of pale lilac blossoms. In its native country it is said to grow ten to twelve feet high. It has very stout foliage, and the flowers appear in dense spikes. (*Bot. Mag.*, July.)

911. *ANCYLOGENE LONGIFLORA* *J. D. Hook.* LONG-FLOWERED ANCYLOGENE. (Acanthaceæ.)

A hothouse plant; growing a foot high; with purplish crimson flowers; appearing in spring; increased by cuttings; grown in light rich soil. *Bot. Mag.*, 1866, pl. 5588.

This is pronounced by Mr. Hooker as the finest tropical plant of this tribe, "and cannot fail to be a most important accession to our stoves." It has a suffruticose habit, and something of the flowering character of the *Russellia*. The flowers are tubular, an inch and a half long, and appear in large and dense clusters. Leaves large, deep green. (*Bot. Mag.*, July.)

912. *PRIMULA INTERMEDIA HYBRIDA*. INTERMEDIATE PRIM-ROSE. (Primulacæ.) Garden Hybrid.

A half-hardy plant; growing six inches high; with crimson flowers; appearing in spring; increased by division of the roots; grown in light rich soil. *Ill. Hort.*, 1865, pl. 482.

A hybrid variety, of which the auricula appears to be one of the parents. The trusses are large and compact, and the individual flowers are of a deep crimson color, with a large yellow auricula-like eye. It appears to be a fine acquisition. It was raised by Mr. Fuller, near London. (*Ill. Hort.*, June.)

913. *CAMELLIA MARIANNA PALENTI*. Garden Hybrid.

Illustration Horticole, 1836, pl. 483.

A beautiful Italian variety, imbricated to the centre, of a deep cherry red, neatly veined with a darker shade, with a stripe of white through the centre of each of the inner petals. It is a constant and abundant bloomer. (*Ill. Hort.*, June.)

914. *KLEINIA FULGENS Hook.* BRILLIANT-FLOWERED KLEINIA. (Compositæ.) Port Natal.

A greenhouse plant; growing two feet high; with scarlet flowers; appearing in spring; increased by cuttings; grown in light soil. *Bot. Mag.*, 1866, pl. 5590.

A succulent looking, bushy plant, with rather large, glaucous or pea green foliage, and axillary flower stems, four to six inches long, terminated with a single flower-head, composed of many little florets, of a bright vermilion orange, or scarlet. It is a native of Port Natal, and forms a pretty addition to the class of succulents, its brilliant half-globe heads of flowers being peculiarly showy. (*Bot. Mag.*, Aug.)

915. *FREMONTIA CALIFORNICA Torrey.* CALIFORNIAN FREMONTIA. (Malvaceæ.) California.

A hardy shrub; growing ten feet high; with yellow flowers; appearing in June; increased by layers; grown in rich garden soil. *Bot. Mag.*, 1836, pl. 5591.

The Fremontia was originally discovered by Col. Fremont, in his expedition to the Rocky Mountains, and was named and described by Dr. Torrey, in his report of the plants found on the route. But it has not been introduced until Messrs. Veitch, through their collector, imported seeds or plants, and it flowered for the first time in their collection in June

last. It is undoubtedly the choicest early flowering shrub introduced of late years. It has a small, deep green maple shaped foliage, and the numerous stems are profusely covered with large golden yellow flowers, two to three inches in diameter, remarkably showy. Its botanical characters are not yet wholly decided. Dr. Hooker had heretofore classed it among the Malvaceæ; but, upon further examination, he is inclined to refer it back to the original position given it by Dr. Torrey, to Stereuliaceæ. It adds one more to the magnificent shrubs of our native flora. (*Bot. Mag.*, Aug.)

916. *SANCHEZIA NOBILIS* *Hook.* BRILLIANT-FLOWERED SANCHEZIA. (Acanthaceæ.) Eucador.

A stove plant; growing three feet high; yellow flowers; appearing in summer; increased by cuttings; grown in light rich soil. *Bot. Mag.*, 1836, pl. 5594.

A most beautiful and highly interesting plant, introduced by Messrs. Veitch, and discovered by their collector, Mr. Pearce, in 1863. It flowered for the first time in June last. It forms a vigorous, stout, erect plant, with large, deep green foliage, and terminal panicles of flowers, forming, together, a dense panicle, most brilliantly colored, the branches deep purple, and the corollas tubular, full two inches long, and light yellow; at the base of each panicle are two bracts, an inch or more in length, and of a deep crimson; altogether forming a magnificent object. It belongs to the little known genus *Sanchezia* of Ruiz and Pavon. (*Bot. Mag.*, Aug.)

917. *ANTHURIUM SCHERZERIANUM* *Schote.* SCHERZER'S ANTHURIUM. (Araceæ.) Guatemala.

A stove plant; growing two feet high; with scarlet flowers; appearing in summer; increased by division; grown in light rich soil. *Ill. Hort.*, 1866, pl. 484.

A magnificent arad, belonging to the caladium tribe, with long, narrow, tapering leaves, and numerous stems, terminated with a brilliant scarlet spathe, reflexed, and a spadix of the same color, remarkably showy, curious and magnificent. It has been one of the prominent plants at the exhibitions, and is still sold at a very high price. It is from Guatemala, and is cultivated similar to the caladiums. (*Ill. Hort.*, July.)

918. LOBELIA CORONOPIFOLIA L. CORONOPIFOLIA-LEAVED
LOBELIA. (Lobeliaceæ.) Cape of Good Hope.

A half-hardy perennial; growing a foot high; with blue flowers; appearing in summer; increased by cuttings and seeds; grown in good garden soil. *Ill. Hort.*, 1836, pl. 485.

A greenhouse and summer blooming lobelia, of a strong and rather erect growing habit, with numerous stems, bearing five or six large and beautiful flowers, of a clear sky blue, tinged with violet in the throat. It flowers abundantly in the greenhouse in winter, and the open garden in summer. (*Ill. Hort.*, July.)

919. TEA ROSE, ISABELLA SPRUNT. Garden Hybrid.

Illustration Horticole, 1836, pl. 486.

This is the new Tea Rose, raised by Mr. Buchanan of New York, and recently introduced to our collections. It has the vigorous growth of Saffrano, from which it was raised, but the flowers are of a clear sulphur yellow, instead of the saffron tint of that variety. It flowers freely during the winter, and its neatly pointed yellow buds are admirable for bouquets. (*Ill. Hort.*, Aug.)

General Notices.

SEDUM FABARIA.—Has any one tried *Sedum Fabaria* in beds? This season I have a bed of it which has been in flower ever since the beginning of August, and it is now (Sept. 10) the best bed we possess. It stands wet weather excellently, and, even before it comes into flower, its appearance is by no means unattractive. The way in which I grow it is to put five or six buds round a small pot, inside in January, keeping them in the greenhouse, and repotting them when they require it, into 8-inch pots. I stake them out when they seem to want support, using good stakes for that purpose, as their weight is considerable. About the beginning of June they may be plunged, pots and all, where they are intended to remain.—(*Gard. Chron.*)

CROCUSES.—These may be planted as soon as beds are ready for their reception. They like a deep, light, rich, sandy soil, but will thrive in an ordinary soil or situation. In planting the bulbs should be covered from two to three inches with fine mould; and if an effective display, during the first season, is desired, plant thinly—not more than two inches apart. For edging borders and beds the crocus is exceedingly useful, and when planted

in lines along the margin of walks, or in clumps of 3, 6, 12 or more bulbs each, and allowed to remain in the ground for several years, the effect of the masses of flowers which they produce is all that can be desired. Care must be exercised to protect them from mice, which are exceedingly partial to them, especially in winter.—(*Gard. Chron.*)

NEW MODE OF DRYING PLANTS.—Twenty years ago, when botany was my hobby, says Mr. Loughborough, in “*Science Gossip*,” I adopted a plan for drying my specimens of plants which was both rapid and very effectual in preserving colors. I borrowed a tin dripping-pan from the cook, which was just the size of my sheets of blotting-paper. In this I laid the produce of the day’s excursion between sheets of blotting-paper in the usual way, and when the pile was completed I covered it over with a layer of common scouring sand half an inch thick, so that the tin dish appeared to be simply full of sand. I then placed it on the kitchen fender, or on the hob, or in the oven, if it were not too hot, and in three or four hours the whole batch of specimens was perfectly dried. It required a little care to take them out at the right moment, when they were baked just enough, and not too much; but this care being given, the success of the plan was perfect. Many specimens still in my herbarium bear witness to the superiority of such rapid drying over the old method.

WISTARIA SINENSIS IN SUMMER.—Left to itself, the *Wistaria sinensis* only flowers once in the season. During the summer a few flowers are, it is true, produced, but not in sufficient numbers to constitute a second season of bloom. This fact, however, shows us that by particular treatment the wistaria may be made to bloom a second time, and that this treatment consists in favoring the development of those portions of the plant which produce summer blossoms; that is, of those short spurs, the buds of which are crowded together and surrounded by leaves. Almost always on the shoots that have produced flowers, there is produced a vigorous leaf bud which sometimes forms a shoot some yards in length. This shoot, as it produces leaves only, should be stopped, except in those cases where growth is required to fill up an uncovered space. If, instead of allowing these shoots to be developed, they be pinched off in their first stage, the sap becomes concentrated at the base of the leaves, and causes the development of flower buds in place of leaf buds. By operating in this manner continuously and carefully a second crop of blossoms may be obtained.

STRAWBERRY CULTURE.—I hope that others may find the following as profitable a mode of cultivation as I have done; it is no hasty theory at which I have arrived, but the honest practice of at least eight years. My system is simply as follows: As soon as the fruit is gathered, I layer what runners are required in 60-sized pots, filling the pots without crocks with any common soil. I then put the runner on the surface, and a stone on it to keep it down. In a week, or, at most, a fortnight, the runners will be

rooted. If there is ground ready to receive them, they may be planted as soon as they are separated from the parent, but I have to wait until ground can be cleared of early peas, potatoes, or something of that sort; owing, however, to the runners being in small pots, they can be put in any out-of-the-way corner till the ground is ready for them, which I prepare as follows:—I trench deeply and dung (of which they cannot have too much) as well as can be afforded. I then tread down firmly and roll the ground till it is quite hard. It cannot be made too hard. I then plant the runners, which may now be called plants, at angles three feet apart, in groups of three, thus—* * * * I give water if the weather is dry, cut off what

* * *
runners they make during autumn, and keep clean, and when the flower stems appear the following spring, I lay some clean straw between the plants. I find by this system that they require little or no artificial watering. The ground being fresh, and so recently filled with roots, they will bear a heavy crop without showing signs of flagging. I like to plant in August if I can, but I have made plantations with equal success in the second week of September. At present all my 1865 plantations are on the dunghill except a few Riflemen and Frogmore Late Pines on a north border, and these will follow as soon as the fruit is gathered, and the runners are secured. I have kept plants a second year to see the difference between them and young plants, but the difference is so much in favor of young plants that I have for years given up keeping any variety after it has once fruited. I do not even like to plant out forced plants. It is said that a few fruits may be got off them in autumn, which is true, but they are so very few that I do not think that they repay the trouble of planting. I have frequently gathered off young plants, single fruit, three ounces weight, and hundreds, two ounces in weight—in fact, the fruit from young plants is all fine, both as regards size and flavor. This year we have gathered off a piece of ground, 77 feet in length and 65 in breadth, over 700 lbs. of fine fruit, and in former years I have obtained equally good results. I generally plant broccoli after the strawberries. In clearing the latter, I merely cut them off with a spade under the collar. I then make holes with an iron bar on the hard ground, and if the weather is dry fill the holes with water. I then puddle the broccoli in with a dibble. When the ground is all planted I give another watering. They require no more, even if it should not rain for a month or six weeks. Just before the broccoli plants meet in the rows I fork the ground up between them, pushing the soil toward the plant, which require no more attention until they are laid down for the winter. I find all the cabbage tribe planted in summer do best on solid ground, in which it does not club —(*Gard. Chron.*)

LILIUM AURATUM.—I beg to forward you my yearly account of the progress of this lily with us here, which from letters I receive, not only from remote parts of Britain, but also from the Continent, would appear to be of more than usual public interest. The bulb now in a 15-inch pot, has produced three stems, two of which are each nine feet six

inches in height, from the surface of the soil; one has thirteen flowers, the other, fourteen. The smaller stem is only two feet in height, and has only one flower, making a total of twenty-eight. The largest of the blooms is about one foot in diameter, which is not so large, in proportion to the strength of the plant, as the flowers have been in previous years. This, however, is perhaps owing to the fact that I was anxious to get the plant into flower, and subjected it to the temperature of the East India orchid-house, from the time the flower buds were half matured until several of them were expanded. When in this stage the forcing qualities of this fine lily are excellent, as I had it in flower in less than half the time I should have had it in an ordinary greenhouse. The growth of the longest stem, near the bottom, is $3\frac{3}{4}$ inches, that of the other, $3\frac{1}{4}$ inches.—(*Gard. Chron.*)

TRITOMA UVARIA.—This is one of our noblest native plants. We have now a row at the back of a ribbon border, fifty yards long, and averaging over twenty flower stems to the yard. I name it at present, however, merely to direct attention to its value as a decoy and a trap for wasps. I find every flower tube is stored with honey of a strong flavor. The wasps, after remaining a few moments in their tubes, become stupified or intoxicated, and can be killed with the greatest ease. As a decoy it is most useful. Our vine is close to two vineries of ripe grapes, and I have scarcely seen a wasp there since the flowers opened.—(*Gard. Chron.*)

Gossip of the Month.

PEARS RAISED FROM ROOTS. VAN MONS MODE.—A few years since I received a letter from Dr. Van Mons of Louvain, Belgium, which was probably the last letter ever written by him to America. The letter was addressed to Messrs. H. A. S. Dearborn, Robert Manning and myself; from which I extract the following on his mode of raising pear trees from pieces of roots, for publication, should you deem it worthy, in your valuable magazine. Very truly yours, WM. KENRICK, Newton, Sept. 26, 1866.

“I now propagate for myself and intimate friends the most choice varieties of pears, which I obtain *by means of the roots*. Not a single one fails in this new process. It is immaterial in what manner they are set out. This method I discovered accidentally, in consequence of some roots on which I intended to graft other kinds of pears, being thrown on the ground and covered with a little earth, to preserve them until used for that purpose, and which were lost sight of and forgotten until the next spring, when all of them sent up stocks which, in the autumn, were as tall as those raised from the seed of two years' growth. They can be set out in the spring as well as autumn. If I had sooner known this method, I should not have lost a single one of my new varieties of pears, for roots could

have been taken from all the kinds in my large plantation at the time of its destruction.

“Such roots should be selected as have one or more terminal fibres, and those that are often cut off or left in the earth when a tree is transplanted succeed well. They cannot be too small, but should not be larger than the finger. The wounds at the large ends of the roots should be covered with the same composition to protect them, as in grafting. They must be set out obliquely.”

N. B. I believe with reason we may raise the *Pyrus Japonicus* or Japan Quince by the same mode. W. K.

COMPOSITION FOR SHADING GREENHOUSES.—Mr. Dingwall of Albany uses the following composition for washing the glass of greenhouse roofs in summer. He says it will not wash off till fall, when the first early frost cleans the glass ready for a winter's campaign, when all the rays of the sun again come into requisition: One-fourth linseed oil, and white lead; balance benzole and whiting. When applied it gives the glass the appearance of being what is called frosted.

CATALOGUES AND PAMPHLETS RECEIVED.—Catalogue of the Officers and Students of the Agricultural College of Michigan, 1866.

John W. Bailey & Co.'s Semi-Annual Catalogue and Price List of Grape Vines, Plattsburg, Clinton County, N. Y., Autumn of 1866.

Wholesale List of the Hooker Nurseries, for the Autumn of 1866, East Avenue, Rochester, N. Y., H. E. Hooker.

T. C. Maxwell & Brothers' Wholesale Trade List, Geneva, Ontario County, N. Y., Autumn of 1866.

PENNSYLVANIA HORTICULTURAL SOCIETY.—We are gratified to learn that this Society, under the presidency of D. R. King, Esq., is about to erect a new hall in Philadelphia. Over \$50,000 have been subscribed; the ground has been purchased, and the Hall already in process of erection. It will, it is said, be larger than any hall in the city, and probably in the United States. It will be let out for all public purposes, when not wanted by the Society. A Fair is soon to be held by the Ladies attached to the Society, the proceeds of which will be devoted to the decoration of the Hall, after it is finished by the builders.

Societies.

CAMBRIDGE HORTICULTURAL.

This Society held its Fifth Annual Exhibition at the City Hall, Cambridgeport, on Wednesday and Thursday, September 26 and 27.

The Exhibition was one of the best ever held, and the show of pears

superior to anything before seen. They were the principal feature of the display, comprising upwards of five hundred dishes, the whole superior specimens, the space not being sufficient for collections, of which many hundred dishes might have been contributed by Hovey & Co., H. Vandine, and Davis & Bates. There were no less than fifty dishes, numbering twelve specimens, of the Duchesse, many of them weighing twenty ounces each, and all averaging nearly a pound. Beurré Diel, very large and fine. Des Tongres, ten or fifteen dishes; superb Sheldon, Doyenné du Comice, Beurré Hardy, Howell, Swan's Orange, Beurré Clairgeau, Marie Louise, Louise Bonne de Jersey, Winter Nelis, Moore's, Easter Beurré, Beurré Bachelier and others. A silver cup, valued at \$25, was offered for the dish of the largest and handsomest pears; this was carried off by Mr. Ricker, with the Duchesse, twelve superb specimens, weighing 13 lbs. Nearly the entire five hundred dishes were put up for competition for the prizes, for ten or five varieties, or single dishes. As evidence of the character and beauty of the specimens, the twelve Duchesse which obtained the prize, were sold for \$25, and the next best dish of twelve, \$15.

The grapes were also excellent, though not quite up to last year. Messrs. Davis & Bates had about a dozen kinds, among which the Adirondac and the Framingham were conspicuous, both fully ripe, and the latter very black, sweet and delicious. Judge Parker sent some fifteen or twenty kinds, but not very large bunches. Concord was very handsome, and even some of the Isabellas were ripe, and very large and fine. With a good year we predict the Cambridge cultivators will make a superb show next season. Many fine specimens of foreign grapes were shown.

Plants were contributed by Hovey & Co., who had a large collection of rare specimens, including palms, dracænas, caladiums, yuccas, and similar plants. No prize was offered, but the Committee gave a gratuity of \$15 for the superb display.

The vegetables were of a superior order, and evinced the interest taken in their culture, even in the small gardens of large cities.

Prizes for fruits, bouquets, vegetables, &c., were awarded, to the amount of \$150, but we have no space for the long list.

Although the weather was unfavorable at the opening, there was a good attendance the second day, the large Hall being crowded with visitors. With the proceeds of the silver cup pears, which were sold for the benefit of the Society, upwards of \$150 were received above the expenses.

Massachusetts Horticultural Society.

Saturday, July 7.—The stated quarterly meeting was held to-day,—the President in the chair.

Mr. Whitmore, from the Finance Committee, reported that they had attended to the duties assigned them, and reported the name of E. W. Buswell as Treasurer, to succeed Capt. Austin. They also reported a resolution, presenting Capt. Austin with a testimonial, of the value of \$150, in consideration of his faithful services as Treasurer for seventeen years.

A ballot for Treasurer resulted in no choice, and the election was postponed until October.

Turner Sargent presented a report on the statues placed upon the Society's building, which was accepted, and referred to a Committee, consisting of L. Wetherell, M. P. Wilder, and J. F. C. Hyde.

The following members were elected: W. G. Prescott and Samuel L. Gay, Roxbury; H. G. Fay and W. R. Melcher, Brookline; F. Green and J. E. Willey, Jamaica Plain; James E. Rayner, Chelsea; A. Freeman, Dorchester; W. H. Locke, Belmont; George Lerner, West Roxbury; Wm. Means, Jr., and George Ames, Boston.

Adjourned one month, to August 1.

August 1.—The adjourned meeting of the Society was held to-day,—the President in the chair.

On motion of C. O. Whitmore the vote, postponing the election of Treasurer to October, was reconsidered, and it was voted that a special meeting be held August 18, for the election. Adjourned.

August 18.—The adjourned meeting of the Society was held to-day,—the President in the chair.

E. W. Buswell was elected Treasurer.

The following members were elected: Geo. H. Jones, Newton; L. F. Whitney, Charlestown; J. W. Chapman, Malden; C. C. Dike, Stoneham; Wm. Hilton, Boston; J. H. Putnam, Brookline; C. H. Brigham, Grafton.

Adjourned two weeks, to September 1.

[The above proceedings of the Society were omitted in our last report.]

Saturday, October 6.—The stated quarterly meeting of the Society was held to-day,—the President in the chair.

Officers were chosen for the ensuing year, as follows:—

President—J. F. C. Hyde.

Vice-Presidents—W. C. Strong, C. O. Whitmore, H. Hollis Hunnewell, W. R. Austin.

Treasurer—Edwin W. Buswell.

Corresponding Secretary—Samuel H. Gibbens.

Recording Secretary—F. P. Denny.

Professor of Botany and Vegetable Physiology—John L. Russell.

Executive Committee—The President, J. F. C. Hyde; the Ex-Presidents, ex officio, M. P. Wilder, J. S. Cabot, Josiah Stickney, Joseph Breck, Charles M. Hovey; Eben Wight, F. Lyman Winship, D. T. Curtis, C. H. B. Breck.

Committee for establishing Prizes—Chairman of Committee on Fruits, Chairman; Chairmen of Committees on Flowers, Vegetables and Gardens, and Parker Barnes.

Committee on Finance—C. O. Whitmore, Chairman; H. H. Hunnewell, B. P. Cheney.

Committee on the Library—Francis Parkman, Chairman; G. W. Pratt, L. Wetherell, Edward S. Rand, Jr., H. Weld Fuller.

Committee on Ornamental Gardening—H. H. Hunnewell, Chairman; Chairmen of Committees on Fruits, Flowers, and Vegetables, H. Weld Fuller, Parker Barnes, John L. D'Wolf.

Committee on Fruit—W. C. Strong, Chairman; P. B. Hovey, E. A. Brackett, D. T. Curtis, Azell C. Bowditch, Hervey Davis, Frederick Clapp.

Committee on Flowers—John C. Hovey, Chairman; James McTear, C. H. B. Breck, George Craft, F. Parkman, S. H. Gibbens, E. F. Washburn.

Committee on Vegetables—C. N. Brackett, Chairman; B. Harrington, James Nugent; R. McCleary Copeland, George Hill, Walter Russell, G. W. Pierce.

Committee of Arrangements—P. Brown Hovey, Chairman; W. C. Strong, John C. Hovey, C. N. Brackett, D. T. Curtis, E. A. Brackett, C. H. B. Breck, S. H. Gibbens, R. McCleary Copeland, B. Harrington, George Craft, G. W. Pierce, E. F. Washburn.

Previous to the election, Mr. Stickney, Chairman of the Nominating Committee, presented a letter from C. M. Hovey, the President, declining to be a candidate for reelection. After being read, it was ordered to be entered upon the records of the Society.

A letter was read from Dr. Jacob Bigelow, in reference to Mount Auburn Cemetery, which was referred to a Committee, consisting of the President, C. O. Whitmore, and M. P. Wilder.

It was voted that testimonials of the value of \$100 each, be presented to Dr. Wight and F. Lyman Winship, for their long and faithful services as Corresponding and Recording Secretaries of the Society.

Adjourned one month, to November 3.

Horticultural Operations

FOR NOVEMBER.

FRUIT DEPARTMENT.

A severe frost, in the early part of October, killed most of the tender plants, and injured grapes in all but very sheltered localities; but since then there has been no frosts, and such unusually warm and fine weather, that dahlias are in bloom, and grapes hanging in perfection upon the vines up to this date, (25th.) This delightful season has been favorable for all gardening operations, and trenching, planting, pruning, &c., could be forwarded most successfully. Advantage should be taken of the fine weather of the present month to complete the planting, yet unfinished.

GRAPE VINES will now be breaking, and as the nights are colder, and

the days with less sunlight, care should be taken to maintain an even temperature, and not too high at night. Syringe daily, in fine weather, until the flower buds begin to open, when it should be discontinued, and moisture obtained by damping the floors. Tie in the laterals as they require it. Increase the covering on the border with fresh manure. Vines in the grapery should now be pruned, cleaned and weeded. Vines in cold houses should also be pruned, and laid down before the weather is too severe; this may be deferred as late as possible, if the wood is not ripe. Hardy vines may be pruned at once, and protected from the weather.

STRAWBERRY BEDS should now be in readiness for covering as soon as the ground begins to freeze hard. If they have not been thoroughly weeded let this be done at once. Very coarse, strawy manure, leaves, seaweed, straw, or even pine boughs will do.

STRAWBERRIES, in pots, for forcing, should now be repotted, if not done already, and placed in a frame, where they can be well exposed in sunny weather, and protected from freezing. On the approach of cold weather cover with leaves till they are wanted for removing to the house.

ORCHARD-HOUSES should be well aired, night and day, only closing them in rainy or snowy weather. The pots should be protected with a covering of six inches of leaves.

FRUIT-TREES, of all kinds, should be transplanted this month. It is the best season.

PRUNING should now be attended to, cutting in all laterals to two or three buds, thinning out old wood, and shortening in the leading branches. Scrape and wash with whale oil soap, or chloride of lime, if infected with insects.

CANKERWORM GRUBS will soon begin to run; either tar or otherwise protect the trees in good season.

FLOWER DEPARTMENT.

The frost of October 4th was sufficient to destroy or injure all tender plants, but those less tender are still in full bloom. Since then the weather has been fine, and the opportunity for housing and sheltering plants never better; in fact scarcely any protection has been needed. With the present month colder weather and hard frosts will come, and frames will require covering to make all secure. If the planting has not been already done, it should be proceeded with at once, before the nights are frosty, and the ground chilly and wet. The conservatory and greenhouse should be gay with chrysanthemums, bouvardias, eupatoriums, stevias, and other early flowering plants. As these go out of flower their places should be supplied by others, from the frames or reserve-house. Air abundantly in good weather, and do not keep up too high a temperature at night, 50° is ample.

CAMELIAS will now begin to bloom. If beautiful plants are wanted leisure time should be taken to tie them up to a straight stake. Wash the pots, and top-dress the plants, and syringe in good weather.

PELARGONIUMS will now require attention, as this is the period when they get well established in the pots. Keep them quite cool, near the

glass, and rather dry; the least tendency to draw up will show that the house is not sufficiently aired, and the plants kept too wet.

AZALEAS will flower as early as January, if they are kept in the warmest part of the house, and syringed often. By proper management a succession of flowers may be had till June. Now is just the time to tie the plants into good shape, either pyramidal or conical. With a little attention an ill-shaped plant can be made a fine specimen. When the branches are strong they should not be brought into form at once, but gradually, to prevent breaking. See that they are free from thrips or red spider.

CHRYSANTHEMUMS will be flowering freely, and should be supplied with liquid manure, at least once a week.

CINERARIAS AND CALCEOLARIAS should be shifted into larger pots, and placed on a cool shelf, near the glass.

PANSY SEEDS may be yet sown, for early spring blooming.

HYACINTHS, potted in October, may be brought into the house for early blooming.

CACTUSES should be more sparingly watered.

ROSES should be kept in frames as long as the weather will admit, when they should be pruned and taken into the house for blooming.

JAPAN LILIES may be potted this month, and placed in a cold frame, or cool part of the house.

CUTTINGS OF VERBENAS, SCARLET GERANIUMS, &c., put in in September, or early in October, should now be potted off.

PREPARE SOILS. and house them where they will be convenient for use in the early part of the spring.

HEATHS should be kept in frames as long as the weather will admit, and then put into the coolest part of the house.

FLOWER GARDEN AND SHRUBBERY.

Beyond keeping everything neat and clean there is little to be done around the lawn. Sweep up all dry leaves, and occasionally rake the walks. Look over the shrubs, and cut away any dead or decaying branches, and, before cold weather, top-dress with good rotten compost.

LILIES, and other bulbs, should all be planted this month.

GLADIOLUS should be taken up immediately.

FRAMES should have attention; store away all half-hardy plants, plunging the pots in leaf mould, airing freely in good weather, and covering with *dry* leaves when the weather becomes severe.

VIOLETS, in frames, should be well covered in cool weather.

TREE PEONIES should be protected by a covering of dry leaves or strawy manure.

RHODODENDRONS should have the earth around them covered with four or six inches of leaves.

TRANSPLANT all kinds of herbaceous plants, which flourish much better by occasional removal.

DIG AND TRENCH ground intended for planting next spring, ridging it up for the action of air and frost.

THE CONCORD GRAPE.

A grape, so well known as the Concord, and so often alluded to in our pages, would hardly seem to require any additional notice. But the recent vindication of the character we gave it, when first introduced by us to the public, demand that we should once more bring it before our readers.

Twelve years have passed since we described and figured the Concord in our Magazine,—certainly not a long period in the history of grape culture,—but yet carrying us back to a time when there was not a single known hardy grape of any value, which could be relied upon for a regular crop in the Northern and New England states.

It was at this opportune moment that the Concord was brought before the public; and the great value of its introduction is now easily estimated by the thousands and tens of thousands of pounds of superb grapes, which, at a price within the means of the whole mass of the people, find their place in the markets throughout the United States. Catawba and Isabella were, twelve years ago, the only table grapes. Diana was but little known, and the Hartford Prolific and Delaware had just been introduced. Now we have the Concord, Rebecca, Allen's Hybrid, Union Village, Creveling, Iona, Israella, Adirondac, Framingham, Rogers' Seedlings, Maxatawny, Cuyahoga, and Diana Hamburg, not to enumerate several others of doubtful merit. In no fruit has there been more marked improvement than in the grape.

It would be useless to deny that much of this remarkable advancement in the culture of the grape may be traced to the advent of the Concord. In the Catalogue of American grapes, enumerated by some cultivators in 1854, more than fifty varieties found a place, yet scarcely one of them was worthy of attention; and after the introduction of so many worthless kinds it had become almost a settled belief, that the native grape would not submit to amelioration so readily as other fruits, and the attempts to improve it were

almost, if not quite, abandoned. In proof of this we only need refer to the fact that all the known grapes of any excellence, other than accidental seedlings, with the exception of Allen's Hybrid and Rogers' Seedlings, have been produced since the Concord was brought into notice. Now the number is legion; and although but few of them have fruited, or yet been proved, there is little doubt but many new and desirable sorts will yearly be added to the list. So much of improvement we are thus indebted to the Concord, which renewed the assurance that good grapes could be produced from our native vine, with patience, perseverance and skill. Allen's Hybrid immediately followed, with another strong proof of the value of hybridization and the aid of the foreign grape in amelioration, and the still additional success of Mr. Rogers, Dr. Grant, and Mr. Moore of Rochester, has set at rest all doubts in regard to the grand results which will follow repeated endeavors at the improvement of our native vine.

It would be unprofitable reading to review in detail all that has been said against the Concord, and it would be better to pass over that period of its introduction, when so many cultivators denied our statement of its qualities, and seemed determined to class the Concord among the "jelly grapes," and reiterate its utter worthlessness,—for we are charitable enough to believe it was a sad error of judgment, if nothing more,—we prefer rather to append here the decision of the Greeley Prize Committee, who, after the labors of two years, with all the best grapes before them, including the Iona, have now made their final decision, that the BEST GRAPE—according to the demands of Mr. Greeley's offer—is the CONCORD. The report reads as follows:—

The committee appointed by the Horticultural Association of the American Institute to award the prize of \$100, offered by the Hon. Horace Greeley, President of the Institute, for the best grape for general cultivation beg leave to report: *First*, that it is a matter of regret that the offer has not called out more competition from the thousands of persons now usefully and profitably engaged in the production of this delicious fruit, of which there were but five varieties presented for our

examination at the late session. *Second*, one of the conditions of the offer was, that samples of the fruit be presented for examination by the committee, and therefore we were restricted to the consideration of such varieties as were brought before us. *Thirdly*, at a meeting of the committee held last year, a scale of points were adopted for our guidance in the decision on the grape. One of these points was the necessity of healthiness and hardiness of the vine and foliage, by which is meant its ability to withstand frost and mildew. Excellence of the fruit itself is, in our opinion, a point of great merit, but of infinitely less consequence for the general planting community than healthfulness and vigor, hardiness and productiveness of the vine.

Fruit-growers are generally convinced of the importance of selecting such varieties as will prove profitable, and everybody understands what is meant by a "good market fruit," although it often happens that such are quite inferior to other varieties in their respective classes.

We believe this to have been the object in offering the premium, and that we were to select from among those kinds that might be brought before us, such a variety that could safely be recommended to the millions to plant, with a tolerable certainty of being rewarded by satisfactory crops. With regard to some of the new and choice varieties brought to our notice as competitors, it will be recollected that, at the meeting of the committee held in September, 1865, we declared ourselves unprepared to make any expression, because we had not then a sufficiently extended opportunity for seeing the vines tested under varying circumstances throughout the country. Another year has brought us into farther acquaintance with the candidates, and better enables us to come to a conclusion, which, however, may yet prove premature. On these grounds, we have awarded the premium to the Concord, to exhibitor 33, W. X. Goldsmith, Newark, N. J., because we believe that, though of less excellence as a fruit than some of its competitors in their trial, it is found, under the most extensive culture in every part of the country, to be both hardy, productive, and satisfactory, in regard to its character as a vine; while the showy appearance of its fruit makes it most

welcome to the millions, with whom it is very acceptable. For ourselves, however, we must be permitted to say that we wish the fruit were of a more refined character, in addition to the admirable qualities of this noble vine.

JOHN A. WARDER,
WM. S. CARPENTER.
P. T. QUINN.
E. WARE SYLVESTER.

No doubt this decision will have the hearty concurrence of the majority of grape growers throughout the country. That there are better grapes, viewed simply as to quality, few will deny—but that any grape possesses so many excellences, neither will any deny, and for hardiness, vigor, productiveness, freedom from mildew, and general quality—it stands among grapes where the Baldwin does among apples—the Bartlett pear among pears—and the Hovey's Seedling among strawberries—the most desirable variety, adapted to all soils and situations; ripening its fruit from Maine to Georgia, and finding its way to the market in such abundance, and at such reasonable prices, that all who love grapes can have their fill. The Concord is, in fact, the only perfectly HARDY good grape that has yet been produced. Upon this subject we shall have something to say in a future number. It is time that the term hardy should be defined. A pear-tree or an apple-tree that required protection in winter we should not call hardy; shall any difference be made with the grape?

ON THE PLANTING OF SHADE TREES.

(Continued from last month.)

ARBORS of different shapes, according to your fancy, made of a framework of wood, to be covered by the Virginia Creeper (*Ampelopsis*) which is a rapid grower, afford an excellent substitute for trees, while they are too small to answer the purpose of shade. These arbors may be constructed in every variety of shape, so as not only to afford

protection to the young trees, but also to set them off to advantage, by their relative position. We seldom see the *Ampelopsis* cultivated so strictly for these purposes. It is usually trained over a porch, or over a shed or a fence, or against the side of a house, or to cover the naked bole of a tall tree. In all such places it is ornamental; but serves no purpose of shade. For this particular purpose frames should be specially designed and constructed. The *Ampelopsis* is recommended for purposes of shade in preference to the grape, because it is a more rapid grower, and because it is more beautiful and ornamental. Its foliage greatly surpasses that of any other hardy woody vine in beauty, when the bright green of its leaves is considered, and their fine glowing tints in the autumn, which may be favorably compared with those of the red maple or the tupelo.

I have considered the best methods of obtaining quick shade and shelter, first by planting poplars and other rapid-growing trees; second by building frames and covering them with vines. But several kinds of hard wood trees should be planted immediately along with these. They should be selected according to the taste and fancy of the owner of the estate; for after all, there is no hard wood tree which would not be considered a valuable object, if it was large and in vigorous health. People are governed by fashion in this matter as well as in other matters; but the main object is to obtain a considerable number and variety of trees, which are good for shade, and cause no inconveniences. Some trees emit a disagreeable odor, like the *Ailanthus*, when it is in flower; some cover the ground with substances that spoil all appearance of neatness, like the Balm of Gilead poplar and the Buttonwood or Plane tree. There is a positive objection to such trees, and even if they were highly valuable on other accounts, these disagreeable habits should condemn them. But why should any person prefer a maple to a lime tree, or a lime to a maple, when all their good qualities are considered? The maple, the lime, the ash, the hop hornbeam, the horsechestnut, the oak, the tulip tree, the elm, and many other common trees are about equally desirable; no judgment is required in the selection of species, except to avoid

those which are in some respects a nuisance. The beech, one of the most beautiful of our indigenous trees, must be excluded from all places of small size, on account of its habit of filling the ground it occupies with suckers. On a common, or in any extensive pleasure ground, or park, this habit would constitute no objection to the beech-tree.

Certain fruit-trees are very good, both for shade and ornament. What tree can be mentioned that exhibits a fairer growth, or affords a better shade than the common garden cherry-tree? Its fruit-bearing habit is the only objection to it; and this renders it faulty as a mere shade tree. The wild black cherry-tree is larger, and has a wider spread; but it is not so handsome as the other. The foliage is sparse, and its branches slender. It is not sufficiently umbrageous, and is wanting in grandeur even when it has attained the largest size. I would not destroy one of these trees, if they were the only ones on my estate. They should remain unharmed till new and superior trees had grown up to take their places: but I would no sooner plant one than I would plant the meanest kind of a poplar.

Pear-trees and apple-trees are seldom large enough for shade, or handsome enough for ornament. Yet standards are picturesque objects in an old field, and I do not despise the taste of those persons who permit some of them to occupy dressed grounds, when shade trees are wanting, until they can be raised. The objection to fruit-trees of large size, for shade trees, comes from the fruit they bear, rather than their appearance. Apple-trees, when they have not been deformed by pruning, are often very comely objects. It is the constant practice of thinning out their branches, to make them productive, that spoils their shape.

Many proprietors prefer to plant foreign species for shade and ornament, that their grounds may present to the eye something that cannot be seen in the wild wood, thereby diversifying the landscape by a greater variety of species. The foreign species have also an advantage over our indigenous trees, in the longer period during which they retain their foliage; as they put out their leaves ten days or a fortnight earlier in the spring, and retain them as many days longer in

the autumn, than our native species. This habit makes some amends for their want of those brilliant autumnal tints which are peculiar to the trees of America. Many persons are pleased also with the foreign aspect which their grounds acquire by planting exotics; and with their contrast to the indigenous wood. The *Catalpa* gives the ground it occupies a tropical aspect; the *Ailanthus* does the same in a less degree; but the latter is offensive when its blossoms are out. It bears a close resemblance, in its foliage and general mode of growth, to the common stag-horn sumach, though the sumach never becomes a large tree. The *Catalpa* recommends itself by its beautiful spikes of flowers, rather than by any superior beauty of foliage, which is too thin to afford a dense shade. The horsechestnut, another exotic, is more beautiful and desirable than either of the two just mentioned. This old-fashioned tree is deservedly admired as much as when it was first introduced. In June, when in flower, it is the most beautiful tree of the roadside; and when its flowers have fallen, there are few trees that surpass it in comeliness of shape, or density of foliage. If we examine the trees on Boston Common, at this time (November 7) we shall see the native species entirely denuded, while a few English elms and English maples are nearly as green as in summer. The leaves of the latter, however, are slightly rolled up, though not embrowned by the hard frosts. The same may be observed of the Italian poplar, the weeping willow, and some of the foreign shrubs, as the lilac and the privet. Hence, if you wish to preserve the greenness of your pleasure grounds as long as possible without planting evergreens, choose the European species of each genus you would like to cultivate. Plant among them a few of our own red maples, and you have both desirable objects secured, that of protracted verdure, and brilliant autumnal tints.

COMMENTS ON APPLE CULTURE.

BY D. W. LOTHROP, WEST MEDFORD.

THE cultivation of the apple has of late become of such doubtful expediency, that no little caution is required in commending it. Out of a list of perhaps over two hundred varieties in the country, only a few are well fitted for a New England orchard or garden. What these few are it is difficult if not impossible to say; yet the past few years of dearth and drought has tended to solve the question, besides presenting other important lessons to the observing cultivator. Some of them may be rather discouraging. Still, there seems to be a disposition to hold on to the cultivation of this important fruit, and not yield up to the discouragements of seasons or the depredations of insects, without severer trials and harder disappointments. The remarkable and disastrously dry seasons of 1864-65 may not be suffered again for half a century, and the apple crop will be likely yet to be as good as ever, as all the other evils have long had an existence, and can and must be met by human art. The peach and the plum may be generally set aside as unprofitable in the region of Boston and northerly, but the apple at least not yet, if ever.

It can hardly be doubted, however, that the market farmers near our metropolis, where land is high, can devote their soil to more productive annual crops. At best, we hardly get twenty bearing years from the apple tree during its life. But notwithstanding this, apple orchards, greater and less, will be cultivated here, and everywhere else in the Northern states. It is all a matter of circumstance and judgment.

One of the most troublesome and stealthy enemies of the apple tree is the "*borer*," so unfavorably known as to need no description. It is most destructive to the young tree from the time it is set till ten or twelve years of age. If kept out till this time, it can do but little hurt, and is less likely to attack the rough bark of the older trees. Good cultivation, and keeping the trunks free from grass and weeds is a preventive, and killing the grub in its hole with a stiff wire, or cutting him out is a remedy. Some cultivators wash the trunks of

the trees in June with lye, others apply whale-oil soap, (which is probably better and safer) about the consistence of paint. This will keep the trunks smooth and handsome, while its causticity will tend to prevent the deposit of the eggs of the fly, without being of sufficient strength to injure the bark. A heap of coal ashes placed around the trunk five or six inches in height will keep the grass and weeds from growing—which the borer delights in—and if it does no good as a fertilizer, it will do no harm.

For the *scaly bark-louse* the whale-oil soap is also a good remedy; but abstinence from the borer and good growth are better.

The *codling moth* is the most universal pest, so common as to become an accepted if not necessary evil in apple culture. Yet some attempt to destroy it. Usually half of the apples, annually set, fall prematurely from the influence of the larvæ. When trees set very full, this may be considered no evil; but the insect is then multiplied, and in after seasons, when apples are scarce, the evil is serious. But there seems to be no sovereign remedy for it. Perhaps the best is to pick up the fruit and give it to the pigs, or adopt some other method of killing the larvæ—if they have not already escaped! But only in small gardens can this plan be carried out.

As to the *cankerworm*, eternal vigilance is the price of apples, where this marauding insect has commenced its ravages. Some cultivators have fancied that its habits forbid its visiting certain localities; but the idea is probably of very uncertain foundation, as they seem to be gaining dominion every year. However, its ravages can in a great measure be withstood.

So with the *caterpillar*. But it is not intended here to enter fully into remedies for destructive orchard insects, as I wish to allude to the cultivation of several varieties of apples.

And first the *Baldwin*. No apple has ever become so popular as this, and perhaps deservedly. But for the few past years it has wofully failed to produce any fruit in the vicinity of Boston, (its native region), and must naturally suffer in its high reputation. As such has not been the case with some other late apples, I begin to suspect that there may be more

desirable winter varieties—taking into consideration hardiness and bearing qualities. As one of these I think the Rhode Island Greening may be mentioned. Though not so delicate in flavor nor so handsome as the Baldwin, it usually grows as well, if not better, and bears more regularly large, sound fruit. As another, the Hubbardston Nonsuch is a more constant bearer, though not equal in quality to either of the above mentioned; yet it is large, handsome and salable. The cultivation of the apple is now so precarious that other things besides quality and beauty must be considered in the selection of varieties.

As an autumn and winter fruit, the *Minister* has met with varied experience. Some have condemned it as being too acid, others as too tender and liable to bruising and decay. It is among the newer apples, and not much known; but if these faults are well sustained (and I think they cannot be), it may not become popular. It is a great bearer, and all the trees which I have seen or heard of the past season have been loaded—in some apple orchards the only fruit. It does not grow so fair as the Greening, but bears a respectable quantity of a salable size and fairness. And the quality is excellent; nothing surpasses it. The late Mr. A. J. Downing considered it the best apple in the country. By careful picking and packing it has been regarded as valuable as a fresh spring variety. So it is—bringing an extra price. But it is unsurpassed in autumn, as we may similarly say of the *Spy*, usually kept till spring. The idea of the *Minister* being too acid in autumn, I cannot comprehend. The tree makes a respectable annual growth, and bears more regularly than the Baldwin.

The *Granite Beauty* is an apple of still later introduction, from New Hampshire; large to very large; yellowish ground, splashed with dull red; in eating with the *Minister*, but not quite so good as the latter, either in fall or spring. Well grown specimens from matured trees are excellent, and command an extra price. The fruit is tender and juicy, with a mild, agreeable flavor, and needs careful picking. The tree is a very rapid spreading grower, with a splendid long leaf, and bears more or less every year, wet or dry; though my tree being young, has not developed its fruit as well as I have

reason to expect it will. It will keep till February or March, but is in fine table order even in November.

The *Fameuse*, or *Snow Apple*. Who can do anything with this elegant fruit here? I have had a tree in bearing seven or eight years, but have never had a dozen fair specimens. It is from Canada, probably from Europe, originally, and seems somewhat "disloyal" to the climate of this region. However, the spring will see it "reconstructed" with the Tompkins County King, in which, *at present*, I have confidence. We should try and not forget that the apple is very uncertain! It is much to be regretted, notwithstanding, that this fruit fails this side of the semi-annual snow-banks, as it has out-fancied all the fancy apples of the amateur.

The *Mother Apple* I have had in bearing a few years, but find it tardy in producing fair fruit. The last season it has improved in fairness and quality, which is rich, spicy, of yellow juicy flesh, though rather crisp. A dark red, late autumn fruit. It has disappointed me somewhat. As a grower it makes wood pretty rapidly, but has not a handsome, broad leaf, and usually locks as if in a half-dying state. Not as good as the Minister or Granite Beauty.

If apples should be cultivated for their productiveness or regular bearing, rather than mere quality, among those I have mentioned, I should prefer the Rhode Island Greening, the Minister, the Granite Beauty, and the Hubbardston Nonsuch. All of these I am impressed bear more regularly than the Baldwin. So I find does the Williams, Astrachan and Garden Royal—the two last quite certain of a crop every alternate year.

But the experience of others may have been different from mine. In many respects I hope it has been. But the more we have of it the better; for it is by this that we are to judge of and improve the future.

POMOLOGICAL GOSSIP.

NOTES ON SOME OF THE NEW AND OLD PEARS.—The following interesting notes on several pears will be read with in-

terest by all lovers of this fine fruit. They are from an amateur cultivator who not only has a correct appreciation of a good pear, but who has had the experience for forming a just estimate of their quality, having a large and fine collection of the best pears. These notes are made from a small collection of specimens sent to the writer in the early part of October. Some of them were prematurely ripened, having been gathered and exhibited at the Annual Exhibition of the Massachusetts Horticultural Society in September. The Sheldon and Pratt were over ripe, while a few were not in eating. The opinion of the writer corresponds very nearly with our own:—

PRATT was almost gone when the package reached me. The size of the specimens was larger than I had before seen it. The quality is nearly first rate—*very fine*.

SHELDON was also quite ripe and soft. Specimens very large and fine, and the aroma up to the highest point of this variety. Sheldon does not color quite enough. Is it not, after all, an amateur, rather than a market pear. I am rather of opinion that B. d'Anjou and Doyenne du Comice both have higher merits as salable fruit. There is a suspicion, also, that it is liable to crack.

DOYENNE DU COMICE has fully ripened, and its qualities surpass my expectations. I notice that you took the prize for this and Sheldon at the September Exhibition in Boston. We think it superior to Sheldon in flavor, and next to Dana's Hovey, which is now our standard of the highest excellence.

MCLAUGHLIN. Some of the specimens have ripened. This pear is not so rich in flavor as I supposed. Still it may be a valuable orchard pear.

FULTON is rather small, but very good—nearly first rate.

HOWELL is very handsome, and although the quality is not very superior, it promises to be a very useful pear. I had specimens on my own trees, free from all russet spots, very beautiful and good.

AMERICA has colored a beautiful golden hue, and makes a fine appearance, not yet quite ripe.

CAEN DE FRANCE looks well and keeps well. I should think it a valuable variety, not yet ripe, or soft.

MADAME ELIZA, not yet ripe.

GEN. TODLEBEN rapidly approaching maturity—the eating condition. The quality I know to be good. I look upon this as one of the most valuable, large, late pears.

DANA'S HOVEY will be in eating condition in a few days. The specimens are large, fair and beautiful. I know that its quality is unsurpassed in rich, sugary (candied) aromatic flavor. I am growing all I can of it. I have about 1,000 trees of it, planted for fruiting.

GRAND SOLIEL not yet ripe. It looks well.

There was not a poor pear in the collection. So far as I have tested them, I think McLaughlin the least excellent in flavor.

You may be surprised that some of the pears ripened so soon. I have always noticed that pears packed in boxes or baskets, and sent any distance, will ripen more speedily than if not moved. Then we have had some hot weather for the past ten days. The fruit was placed on shelves in a very cool, dark closet, and covered with light blankets; but still they ripen rapidly. All our own fruit, Lawrence, B. d'Anjou, Duchess, B. Diel, &c., have ripened some time ago.

DANA'S HOVEY PEAR.—An enthusiastic cultivator who has had an opportunity to try this pear, sends us the following:—
 “The high praise which has attended the introduction of this pear I have heretofore supposed unmerited, as the fruit is rather small, and as tasting one six or seven years ago, in not a very critical mood, I preferred to propagate other kinds, not fully appreciating it. But I desire to beg pardon. Some specimens which I have lately tasted have convinced me that it is the most delicious of all pears, unless in Europe better exist, which is not at all likely. Four or five persons who tested it with me for the first time, readily and perfectly coincided in my opinion—they placing it decidedly before the Seckel. It has a delightful and delicate spicy or musky flavor, striking one at times as similar to the musk-melon; and then its juiciness and honied sweetness leave nothing to be desired. I think it must be considered the ultimatum of excellence in quality, though some favored individual *may* yet originate a variety larger and equally good.”—L.

LARGE BEURRE CLAIRGEAU PEARS.—At a recent Exhibition of Pears in the Island of Jersey, many fine specimens were exhibited, scarcely anything, indeed, being worthy of note but this fruit, for which the climate and soil are so favorable. The most remarkable were some finely formed well-colored specimens of Beurré Clairgeau, shown by Mr. Pond of the Vineries, St. Aubans, weighing over *one and a half pounds* each. This variety, it is stated, is not sufficiently known in England; it ought to be planted in every garden where pears are grown, being a most abundant bearer, even in its young state, and the fruit good in all situations. Among the other sorts exhibited were Doyenné du Comice, General Todleben, Beurré Bosc, &c. The Belle de Jersey (Pound) weighed $2\frac{1}{2}$ pounds each. Although many varieties of pears are grown in the Channel Islands, to a much larger size, than is general in England, yet certain kinds thrive better in the Midland Counties than in Jersey. Among the kinds may be mentioned Marie Louise and Glout Morceau, which rarely arrive at either the size or flavor they are accustomed to get in England.

ADVANTAGE OF CORDON TREES.—A writer thus alludes to cordon trees, after a visit to Mr. Rivers's: One great advantage of cordon training, especially for apricots and peaches, which have a tendency to die off suddenly, is the multiplication of independent trees. Where any tree is confined to a branch the loss of one would be but a trifling calamity, and the blank could readily be refilled. It is very different with large wall trees; and it is seldom that the whole wall of any large garden remains always covered. Cordon training would furnish it much quicker, and with, I believe, just as much again fruit of a better quality. Let any one then who has a blank space, fill it with cordons. Let edges be formed, fruit-tree borders made and covered, and ground vineries and orchard-houses filled with them, until the tables of all are plentifully furnished with the finest fruit, and the denizens of both kitchen and parlor cry out "Hold! it is more than enough." But even then the mission of cordons would be far from complete. Every cottage garden must be stocked, every cottage child surfeited with cordons. Our mechanics and millhands, and shopmen, should grow them in their windows, and in their yards; they must go into the dens of

crime and the garrets of poverty, softening the one and cheering the other, and bettering and instructing all by their transformation of the filth and impurities of both into the most luscious and beautiful fruit. Every one who can command a yard of space and a gallon of earth, may grow one or more cordon trees, and, moreover, ought to do it.

American cultivators know little or nothing of the cordon system, which, as the writer truly says, may be introduced into the smallest garden, against a fence or wall, requiring no more space than the grape.

THE NYCE FRUIT-HOUSE.—We have already announced that a company has been organized in Boston as the Massachusetts Fruit-Preserving Company, for the purpose of erecting a house, under the patent of Professor Nyce, for keeping fruit. This Company will probably have their house completed in January, and ready for foreign fruit in February and March. In the meantime E. S. Converse, Esq., of Malden, one of the stockholders, has built and completed a fruit-house, which he has already filled with apples, pears, grapes, &c. The house is about twenty feet square, and we shall give a full account of it in a future number. The fruit was put into the house the last of September, and is now, November 20, just in the same condition. A few kinds of early autumn pears, which were too ripe at that time to keep more than a week or so, were put into the house, and are now, after six weeks, just in the same condition. The grapes from Mr. Converse's grapery, so ripe that they had begun to shrivel, are keeping without the least change.

Mr. Converse deserves great credit for his enterprise and public spirit in erecting this, the first private house in the United States, thus affording an early opportunity for the Company to test the capacity of Professor Nyce's Patent. The cost of the house, which will hold 500 to 800 bushels, exclusive of the patent right, was about \$1000.

In Ohio Professor Nyce's patent is well known, and specimens have been repeatedly exhibited before the Cincinnati Horticultural Society in a perfect state of preservation from six to twelve months after gathering from the trees. It is hoped that a similar exhibition may be made here of the choice varieties of pears, next spring.

LYCHNIS HAAGEANA.

BY THE EDITOR.

AMONG the hardy and showy perennials, the family of *Lychnis* holds a prominent place. The oldest and best known is the *L. chalconica*, common enough in the old gardens of thirty years ago, but not so often seen now. The double variety is one of the most brilliant and showy plants, but of rather more delicate growth, and is not yet common. Another is the Ragged Robin (*L. flosculei*), and another, perhaps, on the whole, the best, *L. vesicaria pleno*.



16. LYCHNIS HAAGEANA.

Our present plant, *L. Haageana* (FIG. 16) is of recent introduction, having been raised in Germany a few years ago. It differs from the above named kinds, in its dwarfer habit, and the style of growth, as well as size of the blossoms. The stems are slender, and the flowers, which are of a bright orange scarlet, are nearly, or quite, two inches in diameter, and dentated, or jagged, on the edge. It possesses the merit of several of the perennial plants, of blossoming the first year from seed. But the second year, when the plants are stronger,

the quantity of blossoms is much greater, and it then forms a brilliant and showy object.

Though sufficiently hardy to be classed among the hardy plants, its growth and vigor will be much enhanced by a slight covering of leaves, to the depth of three or four inches, and, like other perennials, it should be taken up, divided, and reset, every two or three years. It is easily raised from seeds, which may be sown in April or May, in pots, in the greenhouse, or frame, and afterwards transplanted to the open border, where the plants will bloom all the autumn.

The new *L. grandiflora*, from Japan, is similar to *L. Haageana*, but the flowers are larger, and of an orange tint. It is not sufficiently hardy for our climate, and requires the protection of a frame, or the greenhouse.

FLORICULTURAL NOTICES.

DAHLIA IMPERIALIS.—This very distinct specimen of the dahlia has flowered in various collections, and is quite an imposing and handsome plant, growing six to twelve feet high, and producing large single flowers, with the petals standing partially erect, but recurved at the ends, which give them a bell-like aspect. It is, however, quite too late to bloom in the open garden, and most too vigorous and strong a grower for in-door culture, except in very large conservatories, or trained on a back wall or trellis. Mr. Whiton, an amateur cultivator of Hingham, sent us fine blooms, November 20, cut from his conservatory, where he has it trained to the back wall. The flowers are pale pink, or pinkish white.

ACHYRANTHES VERSCHAFFELTII.—An English amateur cultivator confirms the opinion expressed by others, that this plant is a first rate acquisition, as far as bedding is concerned. It does either for ribbon or edgings, and, if spared, he shall use it largely next season, as it puts *Amaranthus ruber* and *Perella nankinensis* quite in the background; the latter is almost ineffective, while the *Achyranthes* is the admiration of all who see it.

REVIEWS.

THE FOREST TREE CULTURIST; A Treatise on the Cultivation of American Forest Trees, with Notes on the most valuable Foreign species. By ANDREW S. FULLER, Horticulturist, author of Grape Culture, &c. 1 vol., 12mo., pp. 188. New York, 1836.

The rapid destruction of our forests for fuel and timber, is a subject which has hitherto received but little attention. Important as the matter is, and involving the interests of the whole country, there have been but a few attempts made to raise forest trees, and the continued destruction goes on, leaving millions of acres of unprofitable and almost worthless lands in every portion of the Union. Occasionally, in various works upon trees, as well as in the agricultural papers and horticultural magazines, allusion has been made to the subject, but it has failed to interest our farmers and owners of land to any degree, and we know of but a few artificial plantations of any extent.

We have also been surprised at the little interest manifested by gentlemen of wealth and taste in the cultivation of our native forest trees upon their grounds. Comparatively, nine-tenths of our native trees are unknown. Elms and maples are familiar trees, but the magnolia, the tulip tree, the tupelo, the oak, the liquidamber, and many others are rarely seen. We have already, in so many instances, alluded to this subject that we need not enlarge upon it in this brief notice of Mr. Fuller's work; but when we look at the labors of the late Mr. Loudon in the publication of that remarkable work, the *Arboretum Britannicum*, and the full and complete descriptions of the thousands of trees introduced and cultivated in Great Britain, every description having been made from living specimens, we cannot but feel humiliated at the condition of arboricultural taste among us, which limits our gardens and grounds to a score or so of ordinary trees, when our own native species number hundreds, leaving out those of foreign growth.

We welcome, therefore, any treatise, however limited, which has for its object the dissemination of information which shall lead to the culture of forest trees, and increase our knowledge of their growth. This Mr. Fuller does in his neat volume, beginning with the growth of trees from seed, and giving all the various modes of propagation, cultivation, treatment, &c., and closing with a brief description of the most valuable native trees,—deciduous and evergreen,—with short notes upon the most desirable kinds of foreign origin. We shall have occasion to refer to the volume hereafter, and in the meantime we commend it as a valuable contribution to our arboricultural literature.

WOODWARD'S ARCHITECTURE, LANDSCAPE GARDENING AND RURAL ART. No. I. 1867. By GEO. E. & F. W. WOODWARD, Editors of the Horticulturist, &c. 1 vol., 12mo., pp. 120. New York, 1867.

Under this title the Messrs. Woodward have commenced the publication of an annual volume, intended to supply a demand for plans and information in all departments of rural art. Each number is to be thoroughly illustrated with original and practical designs, adapted to the requirements of men of moderate means.

The present volume contains forty-eight designs, beginning with an ice-house, and following with small cottages, farm cottages, drying-house for fruits, farmhouses, small and large stables, porter's lodge, rustic seats, suburban cottages, plans for laying out small and large gardens, chicken houses, barns, country schoolhouses, grape arbors, &c. &c.

The volume is elegantly illustrated with designs and ground plans, with all the accompanying details, for the erection and completion of the same. They are various in style and composition, and cannot fail to present valuable information to all who are about to build or make their home in the country.

THE CULTIVATION OF THE NATIVE GRAPE, AND MANUFACTURE OF AMERICAN WINES. By GEO. HUSMANN, of Herman, Mo. 1 vol., 12mo., pp. 192. New York, 1866.

If grape culture does not rapidly extend throughout the whole country, it will not be for want of books to enlighten cultivators upon the best means of accomplishing this object.

Mr. Husmann is well known as an experienced and skilful cultivator of the grape, and well able to impart valuable information to the reader. In this respect his book is reliable, and, like that of Mr. Fuller, will be a useful companion to all who are about to embark in the growth of the vine, and manufacture of wine.

The subject is divided into five leading parts, viz.: grape culture, with remarks on its history, progress and its future; propagation of the vine,—by seed, eyes, cuttings, layering and grafting; the vineyard,—location and preparation of soil; what shall we plant, and the best sorts; planting, treatment each season,—training, diseases, frosts, manuring,—thinning, gathering, &c.

Next follows descriptions of all the well-known grapes, with the author's opinion of their value, after full trial. Then wine making, with all the details.

The statistics of the vineyard, the cost, product, &c., and a detailed account of several of the best vineyards in Missouri, closes the volume.

We commend it as a timely assistant to the grape-grower, giving actual experience, and not theoretical views, or general deductions, made from mere observation.

MY VINEYARD AT LAKE VIEW. By a WESTERN GRAPEGROWER. 1 vol., 12mo., pp. 143. New York.

This volume has escaped our attention,—indeed, a friend promised us a review of it,—which, not having come to hand, we now briefly notice, hoping that we shall have the promised paper to present to our readers in our next volume.

In a work of this kind we much regret that the author has not given his name, for much, if not most of its value, will be estimated by the reputation and knowledge of the author as a successful cultivator.

Our own impressions of the volume are not over favorable. As a fanciful sketch of "going West," "getting settled," and hints about "buying stock," as well as "first experiences," &c., it makes a readable work, but the author fails to give us that solid information which we require in a volume of the kind, especially when we can have access to such a treatise as Mr. Fuller's. It indicates, however, the great interest in the culture of the grape throughout the West.

General Notices.

LEES OF WINE AS A MANURE.—A writer in the *Revue Horticole* recommends the lees of wine as manure. The discoverer happened to be washing out some old wine casks which were thickly coated with deposit, when it struck him to pour the washings of the cask round the base of a magnolia grandiflora, which was growing very slowly. Next year the effect was so marvellous that he tried the same fertilizer on some other magnolias, with similar results. Since then he has been equally fortunate with the use of the same substance in the case of oranges, oleanders, pittosporams, &c. The soil is described as of a sandy and gravelly nature.—(*Gard. Chron.*) [Perhaps where it is abundant, as in Ohio, it may be valuable as a manure for the grape.—ED.]

COMPOSITION FOR TREES, TO PREVENT THE ASCENT OF THE CANKERWORM GRUB.—The late Dr. Thatcher, thirty years ago, published the following as a composition invented by Major S. Frazier, of Duxbury, Mass., which had proved a more effectual remedy against the cankerworm than any other which had before been known. It consists of soft soap, whale oil, and common liquid varnish, in equal parts, to be applied as often as it gets dry. We have no doubt but it would be quite as effectual as tar, and perhaps cheaper, as it would retain its stickiness a longer time than tar.

LILIUM TESTACEUM.—This fine lily, the *L. excelsum* of some catalogues, is now common in gardens, but I do not think it is generally known that so far from being a native of Japan, as some authors, and most trade lists inform us, there are good reasons for believing it to be a hybrid. Dr. Von Siebold never met with the plant in Japan; whether more recent

collectors have done so would be an interesting inquiry. It appears to have been first brought into general cultivation by M. F. A. Haage of Erfurt, who states that it was detected by him in a batch of Martagon lilies received from Holland, though oddly enough, the Dutch and Belgian nurserymen knew nothing of the plant, and were among the first and most eager to purchase the stock. The Harlem growers regarded it as a degenerated variety of the Martagon lily; M. Haage himself believed it to be a hybrid between the common White lily and the *L. croceum*, but the opinion of M. Spae, author of the "Memoire sur les Especies du Genre Lis," that its parents are the *L. candidum* and *L. chalconicum* is far more likely to be correct. Though it does not develop its radical foliage in the autumn, like the white lily, it is one of the earliest to throw up its stem in the spring; farther it has much of the habit of the *L. candidum* as well as its fragrance; while the influence of the pollen of *L. chalconicum* is clearly shown in its pendent flowers with their half reflexed segments, as well as the chamois or buff color naturally resulting from the admixture of its vermilion with the original white of the *L. candidum*. Moreover, the white downy margin, distinguishing the foliage of the male parent is equally present in the hybrid plant, in a modified degree; and it is worthy of remark, that the *L. testaceum* never ripens perfect seed, which in itself is strong proof of its hybrid origin.—(*Gard. Chron.*)

Massachusetts Horticultural Society.

Saturday, November 3, 1866.—An adjourned meeting of the Society was held to-day,—the President in the chair.

The President, from the Executive Committee, reported that they recommend an appropriation of \$3500 for premiums for 1866, as follows:—

Flower Committee,	\$1500
Fruit Committee,	1200
Garden Committee,	400
Vegetable Committee,	400
		\$3500

The Report was unanimously adopted. A committee of three was appointed to consider the expediency of changing the Weekly Exhibitions back to Saturday, to report at the December meeting.

The following members were elected:—F. B. Hayes, R. Sturgis, Jr., C. A. Darling, F. Wrisley, and A. Wilder, Boston; O. H. Peck, Melrose; G. H. Dickerman, Somerville; S. P. Shaw, Cambridge; F. Thieler and Mrs. Samuel Joyce, Medford; I. P. Langworthy and D. A. Martin, Chelsea; A. T. Brown, Roxbury.

Adjourned one month, to December 1.

Horticultural Operations

FOR DECEMBER.

FRUIT DEPARTMENT.

THE weather in November was unusually mild, with but few frosts, and those very light. This has been highly favorable for all forcing operations, as well as out-door work of all kinds; and the cultivator who has not improved it in preparing for spring has lost much valuable time.

GRAPE VINES, in early forced houses, will soon be in flower, and, as the days grow shorter, and the cold more severe, care must be taken to keep up a proper temperature. In cloudy weather good fires will be required, as the day heat should be ample at all times. Use water more sparingly, but maintain a genial atmosphere. Vines in the greenhouse, or grapery, should be pruned this month, and the wood should be cleaned and washed, to destroy all insects, using whale oil soap, of the consistence of good paint. Protect the border with three or four inches of good strawy manure. Vines in cold houses should also be pruned, if not already done, and afterwards laid down and protected by a covering of earth or straw, earth being the best if there is any danger of mice. Hardy vines should be pruned, laid down and protected by a covering of three or four inches of soil.

STRAWBERRIES, in pots, should be protected in deep frames until they are wanted for forcing. A few may be brought into the house the last of the month, giving them a place on a shelf, near the glass. Strawberries in the open ground should now be covered with an inch or two of coarse strawy manure, meadow hay, or even pine boughs.

ORCHARD-HOUSES should be kept well aired in good weather, only closing up in snow storms or rain. See that the pots are well protected with six or eight inches of leaves, or coarse manure.

RASPBERRIES should be laid down, and covered with two or three inches of soil.

FIGS should be removed to a cool cellar.

PRUNING may be begun now, and continued, in all good weather, till spring.

TRENCH AND MANURE ground for new plantations, if the weather continues favorable.

MANURE PEAR and other fruit trees, removing two or three inches of the old soil, and filling up with well-decayed manure.

SCRAPE, CLEAN AND WASH fruit trees, where the bark is rough or wormy. Strong lime water (not whitewash) will destroy moss.

FLOWER DEPARTMENT.

The mild weather has given abundant time to complete all gardening operations, and been favorable to the growth and health of all plants. The

conservatory should now be gay with chrysanthemums, camellias, and other flowers of the season.

AZALEAS AND CAMELLIAS will now begin to bloom, and will require more attention. Water carefully at this season, giving a liberal supply, but not in excess, particularly to those not yet in bloom. Azaleas, intended for flowering in April or May, should be kept in the coolest part of the house. Now is the time to tie them into shape, either pyramidal or conical. With a little attention every plant may be made a handsome specimen. See that the plants are free from thrip and red spider, which soon spoil the best specimen.

PELARGONIUMS. These will now require much attention, giving the plants a season of rest, keeping them quite cool, and rather dry, until next month. They may, however, be partially tied into shape, preparatory to a shift next month, and further training to make perfect specimens. Young stock may be repotted, and cuttings may be put in if more plants are wanted.

CINERARIAS AND CALCEOLARIAS should be kept on a cool shelf, near the glass. Water carefully.

PANSIES, for winter flowering, should be placed on a shelf, near the glass. Water with liquid manure.

CHINESE PRIMROSES, intended for fine specimens, may have a small shift, and a place on a cool, airy shelf, near the glass.

CALADIUMS may be repotted the last of the month. Use very light soil, and give them slight bottom heat, if possible.

ACHIMENES AND GLOXINIAS may be started into growth for early flowering. Place them in a gentle bottom heat.

CHRYSANTHEMUMS will now be in full bloom. Water with liquid manure twice a week.

PANSY SEEDS, for early flowering, may now be sown.

FERNS may be repotted the last of the month.

BEGONIAS may be repotted, giving them a little bottom heat, if convenient.

CACTUSES should be sparingly watered.

HEATHS should have the coolest place in the house. Water carefully, until they begin to bloom.

CYCLAMENS should be put on a cool shelf, near the glass, watering carefully till they begin to bloom.

ROSES, in frames, may be pruned and brought into the house.

SCARLET PELARGONIUMS, intended for large flowering specimens, should be repotted.

JAPAN LILIES should be potted, if not already done.

HYACINTHS, potted in October, and placed in frames, should now be brought into the house.

PALMS may be repotted, before they begin to make their growth.

NEAPOLITAN VIOLETS, in pots, now brought into the house, will bloom abundantly.

DRACÆNAS AND MARANTAS may be potted the last of the month.

MONTHLY CARNATIONS, now growing freely, may have a small shift into larger pots. This is the proper time to begin their propagation from cuttings.

