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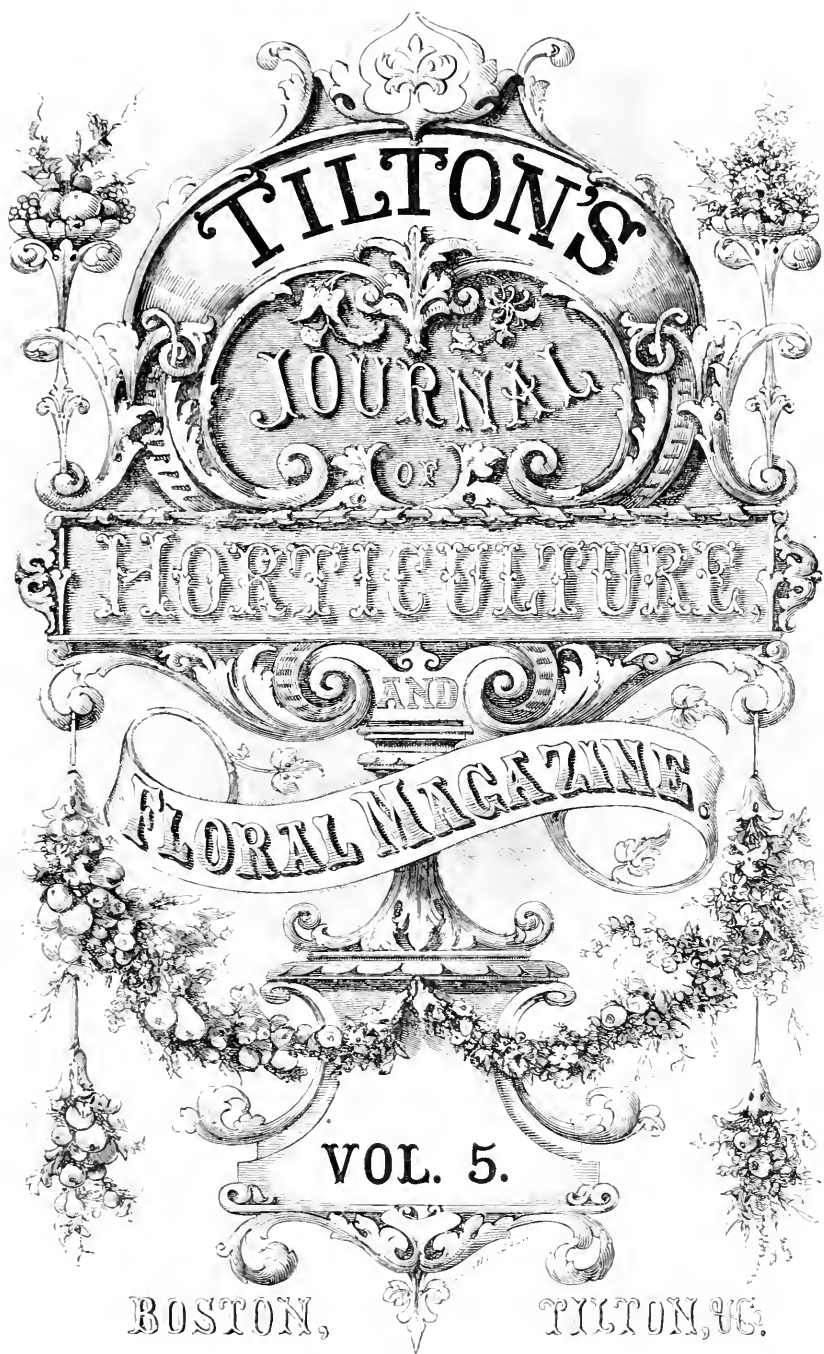
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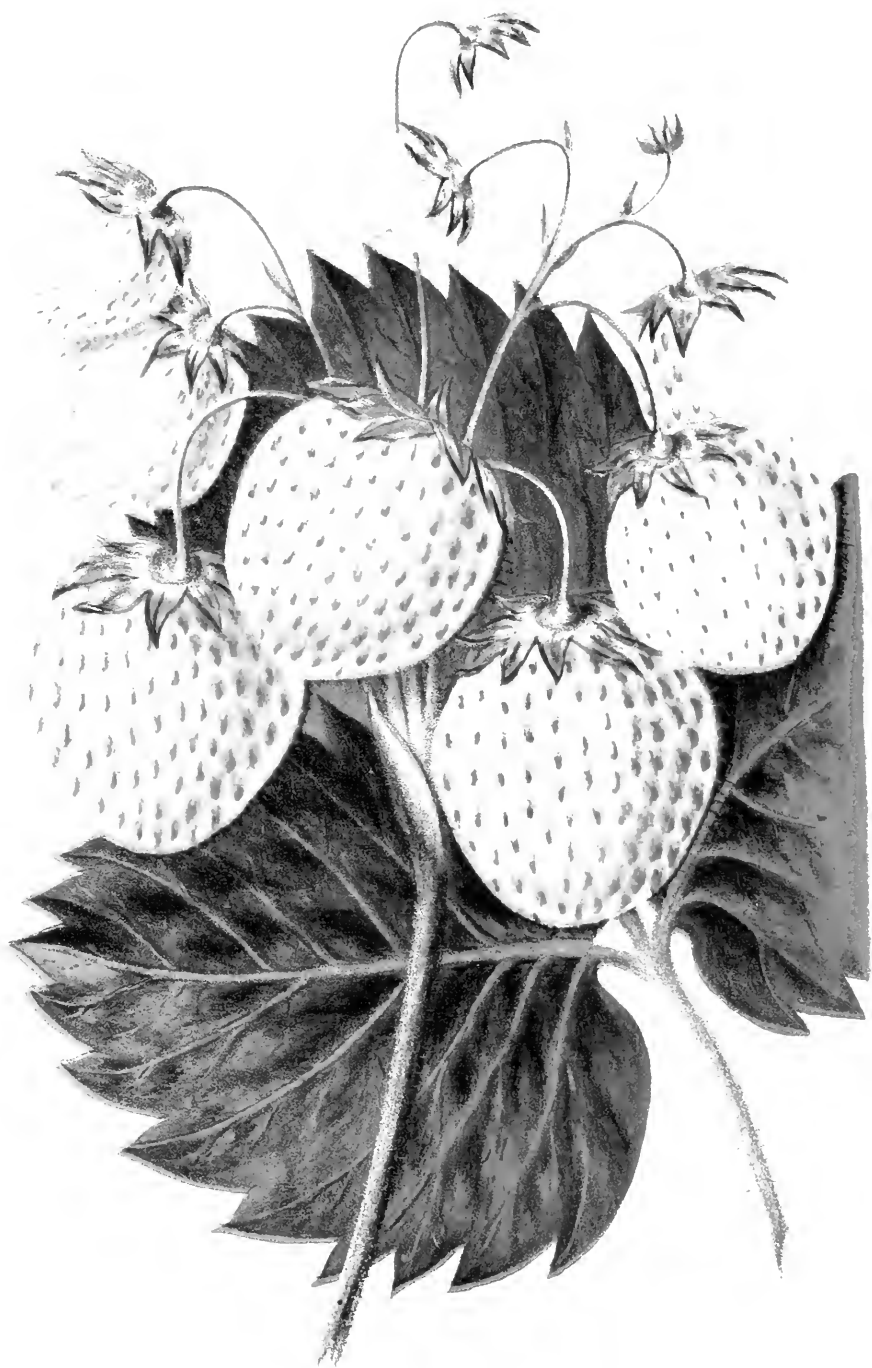
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THE PRESIDENT WILDER STRAWBERRY.



STRAWBERRIES.

THOSE of us who are now actively engaged in strawberry-culture can remember when there were only two varieties of this fruit in cultivation in the best gardens of Massachusetts, and when it was grown in very limited quantities for the market. We well remember when some of our neighbors picked daily fifty to a hundred boxes ; and that was all that could well be disposed of at fair prices. The varieties then cultivated were the Wood and Early Virginia ; the former an imported variety, the latter an American sort. Neither of these was large : but the Wood had at least two points of merit,—it parted freely from the hull, so that it could be picked directly into the boxes ; and it also possessed a flavor much admired by the lovers of this fruit. In time, some more foreign sorts were introduced ; but they were not hardy enough to withstand the scorching suns of summer and blasting colds of winter, and they were not successfully or extensively cultivated. In 1834, our esteemed friend C. M. Hovey conceived the idea of crossing some of the foreign varieties, with the hope of producing a variety that should be hardy enough to endure our seasons, and productive enough to warrant

its extensive cultivation, — a thing that could not then have been said of the larger foreign varieties in cultivation. In order to produce these, he resorted to artificial hybridization. From a large number raised from seed that had been thus crossed, he produced the well-known Hovey's Seedling and Boston Pine. Their introduction marked a new epoch in the cultivation of this fruit. The public could not deny their own senses : but many thought that it was by some strange legerdemain that berries measuring five or six inches in circumference were produced ; for they were perfectly enormous as compared with the Wood and Early Virginia. The plants of this new and wonderful variety were sent out at five dollars a dozen ; and well we remember the first plants we obtained of this same Hovey's Seedling, that has since become so well known and valuable throughout the country. Then but few strawberries were grown, and those wholly about the large cities. But what a change has taken place since that year 1836, when this variety was introduced ! Then not a mile of railroad was built in this country . all the fruit (which was not much) was carried to market in wagons. Then the warm soils of New Jersey, that now produce strawberries by the tens of thousands of bushels, were covered with pines. The hillsides and valleys of New York and Pennsylvania did not, as now, yield their fragrant offerings to tempt the palate of the strawberry-eater. Then the vast prairies of the West were an untrodden solitude. But how changed ! how like a dream it seems ! — the country covered all over with belts of iron, over which are constantly running ponderous engines, dragging behind them, at more than racehorse-speed, cars loaded with strawberries and other fruits, all destined for the large cities, where they command good prices. This variety once introduced was rapidly extended, and soon could be found in almost every garden about Boston. Its large size, its fine color and flavor, added to its hardiness and productiveness when properly treated, made it extremely valuable ; so that it has stood for more than thirty years without a rival. Thousands, yes, tens of thousands, of seedlings have been grown, fruited, and most of them destroyed by the producer as entirely unworthy of cultivation ; but Hovey's Seedling had maintained its place so long, that it is barely possible our friend Hovey began to think that he had reached perfection, and that an attempt to further improve the strawberry would only end in failure. But there were others at work in the same

field ; and many varieties have from time to time been produced, and offered to the public, that, after a thorough trial, have been discarded. We cannot spare time or space to enumerate them all, but will speak only of a few of the most prominent ones.

Burr's New Pine was of the very best quality, but proved to be too tender for market-purposes. It required very high cultivation, and the plants were not always hardy. This variety is not much cultivated now in any part of the country. Jenny's Seedling is another American variety that seemed to promise well, but has not proved to be valuable. Longworth's Prolific and M'Avoy's Superior were both raised at Cincinnati, and supposed to be, when introduced, of considerable value ; but they, too, have passed into the rejected list. Walker's Seedling, though never very extensively cultivated, because of its moderate size and the difficulty with which it was hulled, was, nevertheless, of good quality. When fully ripe, it was equal to the best. This, too, is now rarely found in cultivation.

Burr's Seedling, Imperial Scarlet, Hooker, Cushing, Diadem, Genesee, Monroe Scarlet, Prince's Magnate, Scott's Seedling, Western Queen, Willey, Scarlet Cone, Rival Hudson, Pennsylvania, Orange Prolific, Brooklyn Scarlet, Col. Ellsworth, Crimson Cone, Crimson Favorite, Cutter's Seedling, Emily, Georgia Mammoth, Eclipse, Fillmore, Great Eastern, Monitor, and a host of others that might be named, are now cultivated, if at all, to a very limited extent.

There are others, such as the Agriculturist, Austin or Shaker, French Seedling, Boston Pine, La Constante, Durand, Downer's Prolific, Green Prolific, Lennig's White, Russell's Prolific, Ripawam, Jenny Lind, Napoleon III., and others that are cultivated to some considerable extent in certain localities ; but neither of them, so far as we believe, will ever become widely popular.

After these we come to the few well-known and popular sorts, and the few new ones that are believed to be of first quality.

The Brighton Pine is one of the very best market-sorts that has been cultivated in the past ; and we believe it does well wherever it has been tested. It has all the good qualities that one can desire, except that it is of medium size.

Wilson's Albany, though not of first-rate quality, is yet the great market-

strawberry for the million. Its large size, hardiness, and wonderful productiveness, render it extremely valuable to those with whom quantity rather than quality is the great object. Like the Hovey, and if possible more so, it has found its way all over the country, and everywhere been successfully cultivated. We want a variety that shall combine all the desirable qualities of the Wilson with the good quality of Boston Pine or Hovey's Seedling.

Triomphe de Gand. — This variety is almost the only one among the foreign kinds that has done well in field-culture in this country. It is a berry of good quality and large size, but should be grown in hills to give the best results. It is less popular than it was a few years ago, and must soon give way before the improved native sorts.

The Lady of the Lake is among the new sorts recently put upon the market, originated by Mr. Scott of Brighton, who raised the Brighton Pine; and though not so handsome or so good a berry, yet, if properly cultivated, will, without doubt, prove profitable. It is a pistillate variety, and must have some staminate variety planted near in order to obtain a full crop.

The Jucunda has within a year or two attracted considerable attention, and has proved to be valuable for market-purposes in the hands of some of our noted cultivators. It is at the North not of first quality, being rather watery and flavorless. We have raised berries of good size; but we do not expect good results from it here, whatever it may do at Pittsburg or farther West. It is said to be a foreign variety; and we have never been highly successful with any but native sorts.

We have now briefly noticed most of the varieties that have attracted and are now attracting the attention of the strawberry-grower; and it only remains for us to speak of the latest wonder in the long list of strawberries. Among those who have been eminently successful in horticulture, no one stands higher than Hon. Marshall P. Wilder, who has produced the finest seedling camellias that the world has ever seen, the stock of which sold for a large sum; who has raised the finest lilies, seedling-pears, grapes, and last, but not least, the finest and most promising strawberry that has yet been produced, surpassing in some respects both its parents, the Hovey's Seedling and La Constante, and combining more good qualities than can be found in any other variety of this fruit. Our attention was

early called to it from our position as Chairman of the Fruit Committee of the Massachusetts Horticultural Society ; and we tested it year after year, both in the society's rooms and on Col. Wilder's grounds. This is one of several valuable seedlings that we have seen while visiting our friend, and, we think, perhaps the *most* valuable. The location of the vines producing fruit was not favorable, being among and under the shade of fruit-trees ; and yet the results have been *very* gratifying. The plant is strong and vigorous, full enough so, standing the heat and cold without injury ; leaves well developed ; the flower-stalks strong ; the fruit of large size, sometimes *very* large ; in color, bright glossy crimson-scarlet ; the form is nearly or quite as good as the La Constante ; the flesh is rather firm, nearly white, with an excellent sprightly flavor, with a trace of the flavor of the Wood Strawberry. Time of ripening, between the Hovey and the La Constante. It resembles the latter variety somewhat in foliage, but makes runners much more freely than either of its parents, and the plants are more vigorous. The form of the berry cannot be surpassed even by the La Constante, and must always command the very highest price when offered for sale. Few varieties, if any, will surpass it in flavor ; and, if it shall prove equally good on other soils and in other locations, it will soon take its place at the head of the long list of varieties of this fruit, both for home-use and market-purposes.

We have compared this fruit with sorts such as Hovey's Seedling, Juncunda, Triomphe de Gand, and others that stand as well : and we much prefer "The President Wilder ;" for this is the name given by the Horticultural Society to this remarkable fruit. It is said that there is a new foreign variety that will soon be sent to us that will bear the same name ; so that it will become very important, to those who would secure the true sort, that they should procure them of the publishers of "The Journal of Horticulture," to whom the whole stock of the American "President Wilder" has been sold. Whatever this variety may prove in the hands of others, and in other soils than that in which it originated, one thing is sure,—that there it surpasses all others ; and the description we have given is none too strong, nor do we think the description given in the September number of this Journal any too highly colored. We shall watch this strawberry with great interest ; for we believe it is destined to displace many of the sorts now extensively cultivated.

James F. C. Hyde.

LILIUM AURATUM.

THANKS are due to our noble line of steamers plying between San Francisco and Japan that this magnificent floral production can now be had at prices low enough to place it within the reach of all. A few lines respecting our unsuccessful as well as our successful mode of culture may be of interest to some of your readers.

A large proportion of the first importations both to Europe and our own country, owing to improper packing, were a total loss ; while those which showed signs of life were so much enfeebled by their long voyage, that a well-grown specimen was rarely to be found. Many bulbs which appeared quite sound when planted, would, after attaining a few inches in height, dwindle away, there not being vitality enough to sustain their rapid growth. Those who succeeded in growing them were amply repaid for their trouble ; and we often see accounts in English papers of the large size to which the bulbs have attained, rewarding their enthusiastic cultivator by throwing up their vigorous shoots, several in number, from four to eight feet in height, bearing immense clusters of from fifty to a hundred flowers, measuring from ten to fourteen inches in diameter, filling the air with their delicious fragrance, and drawing crowds of admirers for miles to witness the beautiful sight.

We were among the first importers in this country ; having received a number from England the first year it was offered, and, subsequently, a much larger lot from Japan direct. Like many others who think that too much attention cannot be bestowed upon a rare plant, we determined to give it the best possible treatment. We prepared our compost with the choicest material at our command ; using peat, leaf-mould, well-decomposed manure, silver sand, decayed turf, and loam, mixing with the greatest care. Our bulbs were carefully looked over (the decayed portions removed with a sharp knife), potted, and placed in a cool, shady part of the greenhouse, watered sparingly, and watched daily. Some commenced growth in two or three weeks, others from six to eight weeks, and many gradually decayed. Some grew vigorously, and soon showed their flower-buds ; when, of a sudden, the lower leaves commenced to turn brown, one by one dropped, and

finally the bud shared the same fate. Not more than one-half matured their bulbs. Upon examination of the diseased bulbs, a species of wire-worm was found embedded, which, no doubt, caused their death to a certain extent. Their enfeebled state was probably the cause of their presence, as we have



rarely found them in a perfectly sound bulb. Wishing to test their hardiness, we planted a lot in the open ground, using a compost similar to that described for potting. They were planted late in spring: most of them grew vigorously, and flowered. Upon the approach of frost, they were

lightly covered with leaves ; but, as the weather grew cooler, more leaves, to the depth of about four inches, were placed over them, and the whole covered with evergreen-branches. This covering was removed as soon as the frost was out of the ground. Many which remained dormant the first season now pushed up vigorous shoots ; but they shared a similar fate to those in pots, with the exception that those which did bloom gave from four to ten well-formed flowers, and were more vigorous in growth than those cultivated in pots. Upon examination of the diseased roots, the wire-worm was at work the same as upon those in pots. At the time of planting, we furnished a friend in a neighboring town with several bulbs, who planted them in a mixed border with other flowers, without any preparation. His soil was a reddish, friable loam, with a gravelly subsoil, and had not been manured for two years. The result was, his bulbs all lived, made vigorous growth, bloomed profusely, gradually matured, and, when taken up in the fall, were found to have trebled in size, besides forming numerous offsets ; while those planted in the carefully-prepared bed above alluded to had increased but little in size, and showed a strong tendency to divide up into small bulbs.

Last spring we received another lot from Japan, which were shipped, through mistake, by a sailing-vessel, and were from four to five months on the voyage. They were in very fair order, though considerably shrivelled by being so long out of the ground. The success of our friend induced us to adopt his mode of culture. The bulbs were planted in common garden-soil, where dahlias had been grown the previous year, without any additional manure. The result was a fine, healthy growth ; a profusion of flowers : and, upon examination this fall, we find the bulbs much increased in size, well matured, with no signs of disease or the wire-worm ; presenting a favorable contrast to the above-mentioned bed, which had been so carefully treated.

We were of the opinion, and subsequent experiments have proved, that our bulbs were killed by kindness. They do not require a rich soil, and will grow in any common garden-soil where the tiger-lily will grow.

To those who intend planting we would say, Select an open spot in your flower-border fully exposed to the sun, where water does not stand in winter. If the soil is poor, enrich with a small quantity only of thoroughly-de-

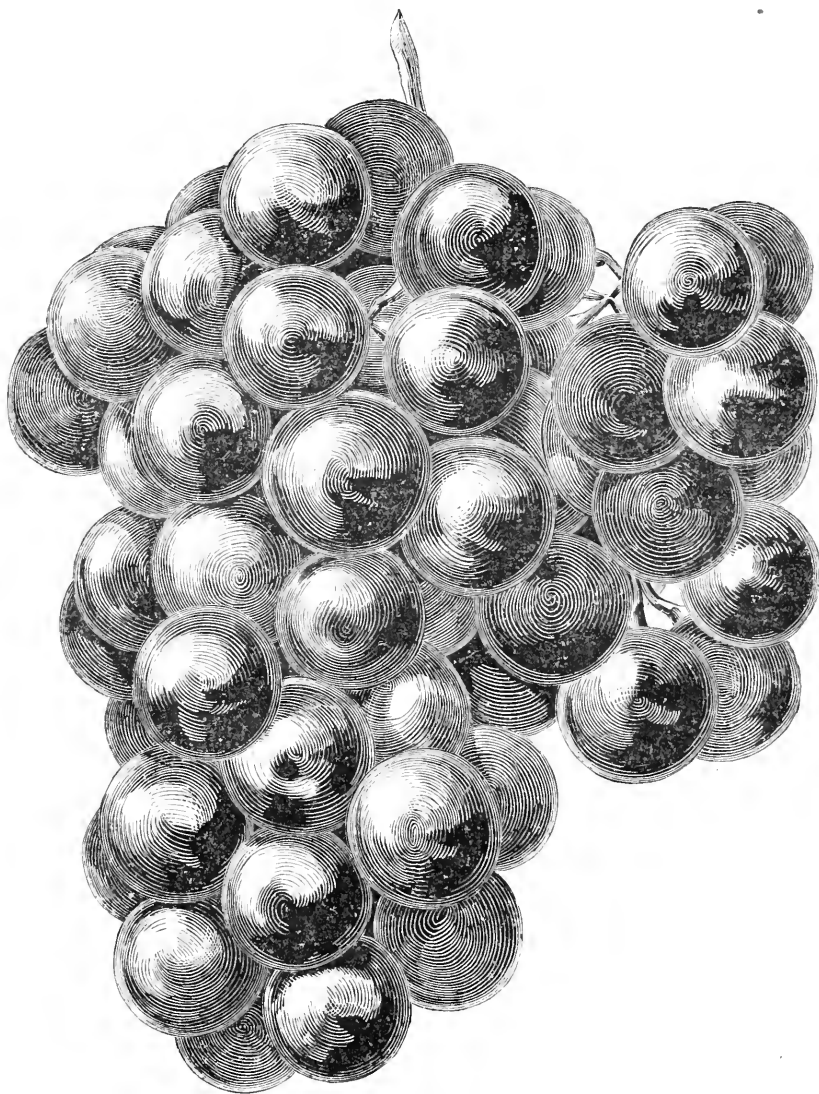
composed stable-manure (the older the better), which must be incorporated with the soil. Should the weather be dry when about to bloom, give plenty of water, and mulch with a little cut straw: this will prolong the bloom, and increase the size of the bulbs. Cover in winter with straw or evergreen-branches; uncover in spring as soon as the frost is out of the ground.

For pot-culture, take common garden-soil that will grow good potatoes; give the pot plenty of drainage; barely cover the bulb; place in a cool, shady part of the greenhouse, or in a cellar; water *very sparingly* with a fine rose. When it commences to grow, place it near the light; give it plenty of air; water plentifully when coming into flower. After it is done blooming, plunge the pot to the rim in the open ground, where the bulb will gradually ripen until quite dry; place the pot in a cool, dry cellar, on its side, where it may remain until it shows signs of growth; repot in fresh soil; use great care in handling the fibrous portions of the root so as not to bruise them; and proceed as at first. *Japonicus.*

THE ROGERS'S HYBRIDS.

PERHAPS no person in the country has devoted more time to the production of seedling-grapes, and no one, certainly, has been more successful, than Mr. Rogers. Many grape-growers had repeatedly declared that there was no such thing as a hybrid between the foreign and native sorts; but they were compelled to acknowledge, when the Rogers's Hybrids made their appearance, that the thing had been done. There are those who still claim that the superiority of these seedlings over the wild grape is only accidental, and that there is no foreign blood in them. The fruit speaks for itself, and one has only to see and taste to be convinced that they are true hybrids. Whether all or any of them are adapted to general cultivation in the North, is still a matter of doubt. Possibly Nos. 3, 4, 9, 15, 19, 41, and 43, may prove valuable. Certain it is, that West and South, where the seasons are long, and warm enough to fully mature the grape, the varieties named, with others originated by the same skilful hand, will prove of great value. We know of no variety of grape grown out of doors that

equals in appearance No. 4 and several others of the black varieties raised by Mr. Rogers. Even No. 1, that seldom or never ripens in the vicinity



of Boston, at St. Louis fully matures, and is considered valuable. It will be very strange indeed if all the numbers sent out shall prove to be worthy

of general cultivation. If even one or two shall stand the test of time, and become popular for market-purposes, the originator will have conferred a great benefit on his fellow-countrymen, and will, no doubt, feel compensated for all his trouble. We regard the black varieties for general cultivation, especially for the market, superior to the red sorts. The wood of most of the varieties ripens well, and they are as free from mildew as the average of grape-vines. The fruit of the black varieties keeps remarkably well, as we know by experience. We have had them in fine condition in mid-winter. In this respect, the Rogers's Hybrids possess a great advantage over the Concord for packing, and sending long distances; for it is well known that the skin of that variety is so tender, that it often breaks in the handling, which tends to early decay and loss. Then the Concord, under the most favorable circumstances, soon loses its flavor after being picked. It may be said that all grapes having a thick skin keep well: which is true; but few or none of the Rogers's grapes have a skin thick enough to be very objectionable. They all seem to possess great vigor, and some of them are exceedingly rampant growers. We propose to give drawings of several of these during the coming year; and we shall be pleased to hear from our readers in different parts of the country as to the success with which they have cultivated the various numbers. Mr. Rogers says of No. 43, "Bunch usually as in engraving, rather short, broad, and compact, often larger than represented; berries roundish to oval, much like Black Hamburg in general appearance; flesh delicate, sweet, and tender; skin thin; color black; early as Concord, and one of the best black grapes; vine very productive and vigorous." *James F. C. Hyde.*

DOG-TOOTH VIOLET.

THE European dog-tooth violet is a very showy spring-flower, and some of the varieties are very fine. Once established, they come up year after year, taking care of themselves. Our native *Erythroniums* are also very pretty; and both the yellow and white species do well in a rich damp loam.

GRAPES AND GRAPE-CULTURE.

THE characteristics of some of the most popular varieties of grapes, and their adaptability to certain soils and locations, should be considered naturally in the pursuit of our subject ; and the present paper will be devoted to their consideration.

While it is true that a few varieties of grapes seem to flourish, and yield satisfactory results, in any soil of moderate fertility, and in almost any locality within the limits of grape-growing, it is also true that there are many others which seem suited only to special soils and locations. Others, also, there are, which partially succeed almost everywhere, but only do well where their individual and peculiar wants are regarded.

Of the first of these three classes, the grape which seems to adapt itself most generally to all kinds of soil and to all situations and conditions, and the most perfect type of its class, is the CONCORD ; and, notwithstanding its inferiority as a fruit, it is more popular, and probably more extensively planted, than any other variety in the Union. This is mainly owing to the healthy, hardy, and vigorous character of the vine itself, enabling it to bear much of ill treatment and neglect, and still yield its generous fruit in abundance ; and, though the grapes are not of fine quality, they are very acceptable to those who can not or will not fulfil the conditions necessary to produce those which are better.

Another variety of this class, though usually regarded as not equal in quality to the Concord, is the HARTFORD PROLIFIC. In hardiness, healthiness, and general habit of growth, it is, perhaps, equal ; and has the advantage of earlier ripening, which enables it to be grown in localities farther north than the Concord will mature.

Of the newer varieties that seem entitled to a position in this class may be mentioned IVE'S SEEDLING, which originated near Cincinnati, O., and has already obtained a high local reputation as a red-wine grape. In habit of growth and foliage, it is much like Hartford Prolific. In quality as a table-grape, I regard it as intermediate between Concord and Hartford, though more pulpy than either of those varieties. Its period of ripening is later than the Concord, although it is colored somewhat earlier.

The Ives has recently received the highest award — three hundred dollars in silver plate — offered by the Longworth Wine-House “for the best general wine-grape for our whole country;” which will, doubtless, add much to its popularity. I may also here mention, that to the Concord was awarded the second and third premiums, — a silver goblet valued at a hundred dollars “for the best wine-grape for Ohio,” and a silver cup valued at fifty dollars “for the best table-grape of our whole country.” I do not propose to criticise or remark upon the decisions of that committee at this time; but I do hope to see the day when such grapes cannot take such premiums.

The above are all black grapes. The principal faults of the Concord as a market-variety, aside from its quality, are rapid deterioration after being taken from the vine, and a tenderness of the skin that renders it very easily injured by handling. The Hartford often falls easily from the bunch as soon as fully ripe. The Ives appears free from these defects, but, so far, seems less productive than either of the others named. In favorable seasons, all these varieties remain healthy, and untouched by mildew or rot; and, in unfavorable ones, suffer less than most others.

A white grape of recent introduction — a seedling from the Concord, named MARTHA, so far as I can judge from an experience of some six years — will be found eminently worthy to join this class, as it has all the characteristics of hardiness, vigor, and healthiness of root, vine, and foliage, of its parent, with the addition of being a grape of much higher character. It is also earlier in ripening than the Concord, which will give it a wider range than that variety. In flavor and quality, it is also much more refined and delicate. It is in color a pale, yellowish green, with thin, white bloom; skin thin, but tenacious; flesh tender and melting, with but little pulp; flavor very sweet and rich; slightly vinous, with a little of the native aroma, which is, however, more palpable to the smell than the taste; seeds few and small; size of bunch and berry medium, but improving each year as vines grow older. The present season gave bunches four and a half inches long, and berries full three-fourths of an inch in diameter. It has, thus far, shown no indications of either rot or mildew; and I venture to predict for it even greater popularity among white grapes than the Concord has achieved among black ones; for, all things considered, I know no white native grape of equal value, or for which I would exchange it. It has also

been tested in Missouri the past season as a wine-grape. and found to produce a white wine of very fine quality ; the must indicating 92° by Oechsle's scale.

There are some other varieties which I am inclined to think may also become generally popular by reason of their possessing many of the cosmopolitan characteristics of the Concord and Hartford, with somewhat better fruit. Among these are Underhill's Seedling, and some of Rogers's Hybrids, such as Nos. 3, 4, 5, 9, and some others. None of these are of very high character, and, though some time before the public, do not seem to have been so extensively grown as to warrant more positive assertions. I cannot but express the hope, however, that the time will come when something decidedly better may be produced, equally adapted to general cultivation, and which may take the place of such in this and other classes as are now tolerated by refined tastes only where better cannot be had, or are too difficult of production.

As types of a class of grapes which seem suited only to special soils and locations may be named Catawba, Diana, and Iona, among red grapes ; Rebecca, Maxatawny, and Allen's White Hybrid, among white grapes ; and Adirondac, Herbemont, and its kindred, Lenoir, Lincoln, and Alvey, among the black ones. Of these, the most extensively planted is the Catawba, which in former years was very popular wherever it would even partially mature. But it is found too late for northern localities, except a few favored situations where the presence of large bodies of water, or other natural causes, so equalize the temperature, and prevent frost, as to prolong the season beyond its natural period. The islands in the southwestern portion of Lake Erie, and the southern shore of the same lake for a limited distance inland, are quite remarkable in this respect, having a longer season, and ripening grapes that cannot be matured a hundred miles southward in the interior. But, for several years past, the vineyards both of the islands and the Lake Shore have suffered to a serious extent from the disease known as grape-rot ; in some instances, in old vineyards which have been enfeebled by previous over-bearing, resulting in almost utter failure. This malady has also proved so destructive in many of the older Catawba vineyards in Southern Ohio, about the region of Cincinnati, that they have been abandoned entirely, or replanted with other varieties,

such as Concord, Ives's Seedling, Norton's Virginia, &c. This unfortunate and apparently increasing tendency of the Catawba to rot in most localities has greatly discouraged its planting; although, where it can be perfectly matured, it is still one of the noblest and best of American grapes.

The DIANA is not quite hardy in severe winters, and seems not as generally adapted to various kinds of soil as the Catawba, though it usually ripens a little earlier. It seems, however, in many cases, shy, and almost capricious, about bearing. I have found it to do best in clay, or gravelly soil too poor to induce a very strong growth. In such situations, I think it bears more abundantly, and ripens its fruit better, than upon rich, black soils, where it makes strong wood-growth, but bears little, and ripens unevenly and imperfectly.

The IONA had the misfortune to be introduced with the most extravagant representations as to its character and perfect adaptability to all sections, and its capacity to meet all the requirements of grape-growers. Had it possessed one-half the perfections claimed for it, it might, indeed, have been the grape for which anxious cultivators have, thus far, waited in vain. I regret to say that failure to meet the expectations raised by such enthusiastic commendation has had the effect to cause a re-action, which promises to depress its reputation below its real merits. Where it can have its special requirements, it is really a grape of high character, and worthy of even extraordinary care and attention. So far as my experience extends, I find it, in soils suited to its wants, healthy and tolerably vigorous in growth when well established, very little liable to mildew or rot, but tender in winter, and wholly unable to resist severe cold. Careful covering in winter is here indispensable. It seems to require a rather dry situation, and a deep, well-worked loamy or gravelly clay. In any thing approaching wet, mucky, or too rich, black soils, I have found the roots invariably unhealthy. It has also been very tardy in ripening. Although it partially colors early, giving promise of speedy maturity, I have found these appearances delusive, and that, to acquire its best condition, it requires a favorable season, — nearly as long as the Catawba. I am inclined to think the most extensive failures with this variety have arisen from its apparently natural tendency to form unhealthy and imperfect roots under treatment, and in soils, where other varieties remain sound and healthy. I have

noticed this peculiarity of the Iona in plants in the propagating-bed, in layers, and in bearing vines. I might think this arose from some error or ignorance in propagation or cultivation if it were not true that other varieties form perfectly healthy roots under the same treatment. And, furthermore, vines received from the great exemplar, who modestly claims his vines to be such as no other can possibly produce, have been equally faulty. Where the Iona will succeed, even with extraordinary care, I would plant it by all means; but I believe the regions where it will be found profitable are few, and far between.

A new grape, called the WALTER, said to be a seedling-cross between Delaware and Diana, and claimed by its originator to be as early as Hartford, may, if it proves healthy, hardy, and productive, be of value. It is better flavored than the Diana, though somewhat like it; and, except the fault of a tough, pulpy centre, is an improvement upon that variety. But, as it has only fruited in one locality, nothing definite can be said of its value for general use.

Among the white varieties, ALLEN'S WHITE HYBRID, REBECCA, and MAXATAWNY, have probably been more extensively planted than any others; but neither of them appears to have acquired extensive popularity for vineyard-purposes. The REBECCA is rather deficient in foliage, and young vines much disposed to mildew. It is also usually a shy bearer, and the vine tender in severe winters. It is, however, one of our finest white native grapes when well grown and perfectly ripened. I have seen the best results from the Rebecca on well-worked clay and sandy soils, in warm, sheltered situations, where the vines were pruned upon the long-cane renewal system, and left wholly without summer-pruning.

ALLEN'S WHITE HYBRID is better supplied with foliage than the Rebecca; and I have found it less inclined to mildew. It is also a better bearer, ripens about the same time, and is also of fine quality. It cannot be called quite hardy; and it is always safe to prune both these varieties in the fall, lay the vines upon the ground, and cover with a few inches of earth for winter-protection.

The MAXATAWNY has the best habit of growth, is more vigorous in vine, and luxuriant in foliage, also less inclined to mildew, than either of the others, and is rather hardier in winter. It is, however, later in the ripen-

ing, and only well suited to localities where the Catawba and Diana will ripen. In Southern Illinois and Missouri, it has been found valuable both as a table and wine grape.

Among the black grapes, I place the Adirondac in this class, on account of its very early growth in spring, which renders it unsuited to all locations subject to frost late in spring. It is among the first to show foliage and fruit-blossoms; and the latter have been destroyed here for four successive years, and only gave fruit the present season by reason of an unusual freedom from frost the past spring. It is also, in some sections, subject to mildew, and quite tender in winter. A slow grower while young; but moderately vigorous, healthy, and quite productive, as the vines have age. A grape of good quality as a table-grape, remarkably free from pulp; juicy, pleasant, and sprightly, but not very rich or sweet. In its general habit of growth and foliage, it is of the Isabella type, but less hardy and vigorous.

HERBEMONT and LINCOLN are much alike in foliage, and general habit of growth. They may be distinguished, however, by the difference in appearance of the young wood. That of the Herbemont has a brownish-gray appearance, and is covered with a peculiar light-purplish bloom; while the wood of the Lincoln is of a handsome red-brown color, without bloom. The fruit-bunches of the Herbemont, however, are larger, and the vine apparently more productive, but too late in ripening for the North. The Lincoln ripens earlier; and I think both it and the LENOIR will succeed wherever the Diana or Iona will ripen. They are here not quite as hardy in winter as the Diana, but fully as much so as the Iona. The Lenoir differs from the Lincoln principally in its foliage, which is rather coarser, somewhat angular, and nearly entire, not deeply lobed like that of the Lincoln. In size of bunch and berry, they are only of small or medium size, black, usually compact, almost pulpless, and rather acid till fully matured; when they become sweet, juicy, and rich, with a peculiarly pleasant, spicy, vinous flavor.

The ALVEY apparently belongs to the same class, but differs in growth and foliage from all the others. The wood is of a dull, dark-gray color, stout and short-jointed; canes rather short; foliage abundant, and somewhat of the Clinton character, but thicker; very little inclined to mildew, and the earliest ripening and hardiest of its class. Bunches and berries

about the size of well-grown Delawares, and of the same general character as Lincoln, Lenoir, and Herbemont. It is the most desirable of all these varieties for Northern culture.

All these last-named varieties are rather slow in coming into bearing, showing very little fruit while young. Old established vines, which are allowed plenty of room and not too closely pruned, bear abundantly. In one view, this tardy bearing of young vines is an advantage, although somewhat discouraging to the enthusiastic vineyardist. It saves the vine from the disastrous effects of premature, excessive bearing, which so often destroys or greatly impairs the after vigor, health, and usefulness of profuse, early-bearing varieties like the Delaware and Catawba. I am not certain that the Alvey should not rank with grapes that may be generally planted with reasonable prospects of success; but it has not seemed to acquire much popularity, and perhaps has not had as extensive trials as its merits deserve. The Edinburgh is another grape of this class, highly appreciated where known, and of excellent quality. It is much like Lenoir, but hardly as vigorous in growth, or as hardy; which are probably the reasons why it is not more extensively grown. There are other varieties in this class of more or less value; but those named are regarded as the most prominent, and the limits of a magazine-article would hardly permit a more extended list. In my next, I propose to consider those grapes which measurably or partially succeed in most locations, but only give their *best* results in favorable situations where their special needs are supplied.

Geo. W. Campbell.

DELAWARE. O.

DWARF APPLES.

THESE should be planted extensively by those who wish a few specimens of fine fruit for the table. They grow freely, occupy but little space, are readily controlled, and bear beautiful fruit. For small gardens, they are indispensable.

PARLOR-PLANTS. — No. II.

IN our last, we briefly gave general cultural directions, leaving for the present article special mention and culture of those plants best adapted for parlor-culture, or window-gardening.

And, first, there is no better plant, and none with which success is more certain, than the calla-lily (*Richardia Æthiopica*). The plant is not a lily at all ; but popularly it is so, and thus in common parlance it will ever be. Having procured our plants in spring, turn them at once into the open ground in a rich, moist soil, or sink the pots in the ground. They will not bloom ; will lose some, and perhaps all, of their leaves. No matter : they are resting, and will be all the better for it. By midsummer they will begin to make a stout, handsome growth, a dark, rich green foliage. Just before the first frost, take up the plants, if in pots, merely by lifting them, if in the ground, with a large ball and all the roots, and pot them. Remove them to a warm, sheltered place, water freely, and, cutting off all dead leaves, wash the pots, and prepare the plants for the house.

The best mode of growing callas is in a hollow table lined with zinc ; and they will well repay having a place to themselves. Eight or ten good plants will fill a table four feet long by two wide. The table should be so deep, that the top of the pot may be covered with moss ; and moss should also be filled in between the pots. We have then a mass of callas in a garden of moss ; and it is as effective an arrangement as could be desired. The only care needed is to give plenty of water at the roots, sponge the foliage once a week, and occasionally turn the table as the plants grow towards the light.

Soon after removal to the house, the plants will make a vigorous growth, and by November will begin to show bloom, and will continue flowering until May, when they should be turned into the garden again, and allowed to go to rest. Callas in pots in the window should have plenty of water and light : with these they seldom fail to do well. Propagation is effected by removing the offsets, which are freely produced. Unless, however, an increase of stock is needed, it is a good plan to allow all the young plants to

remain, increasing the size of the pot as may be required ; as, when thus a plant becomes large, it is seldom out of bloom.

The proper soil is rich loam and peat ; but any good garden-soil will grow callas well. A table of callas in our parlor is a source of constant pleasure to us. From ten plants we seldom have less than five flowers constantly in bloom. Callas will not bear the least frost, and are easily injured by cold draughts : they bear gas and dry furnace-heat well, and are particularly adapted for city window-culture.

The only other species and varieties are *Richardia hastata*, a native of Natal, with greenish-white flowers, and the variety of *R. Æthiopica* with white spotted leaves, neither of which is specially desirable.

Next on our list of plants we place the Chinese Primrose, — *Primula prænitens*, or sometimes *sinensis*, the former the more correct name ; but why applied to a plant with uniformly rough, hairy leaves, would puzzle one to tell. Name it as we may, however, this plant is not only useful and ornamental in the greenhouse, but is especially adapted for window-culture. Of neat, low habit, it occupies but little room, is of the easiest culture, readily accommodates itself to all conditions, and is always in bloom from December to May : indeed, its only fault is, it often blooms itself to death.

The plant, as the name implies, is a native of China ; from which country came also the double pink and white varieties. All the other varied forms with fimbriate flowers and rich colors are the result of hybridization.

The best way to procure a stock is to raise seedlings, though plants may be obtained at any greenhouse.

The single varieties are best adapted for house-culture.

Sow the seed in May or June in a deep pan, covering it very lightly with earth ; and, giving moderate waterings, place it in a warm place. When the plants appear, give air and light, and water gently. As soon as the plants are large enough to handle, prick them out in pans, and let them grow until they begin to crowd each other ; then pot them in small pots, and repot as they grow until they are in eight-inch pots, in which they may be bloomed. All buds should be picked off as soon as they appear until the plants are of the required size ; for, if the plants begin to bloom, they stop growing.

The soil should be turfy loam, well-rotted cow manure, and sand. Drain-

age must be specially looked to, as the plants are liable to damp off; and water should never be allowed to stand round the roots. A warm, sunny window is a good place for them. The colors are red, white, crimson, and all intermediate shades, double and single; and in some varieties the foliage is beautifully cut, while in others the flowers are fimbriate.

After the plants are out of bloom, say in May, place them out of doors, on the north side of the house, or where they will get little sun. Water them carefully during the summer, and pick off all buds as soon as they appear.

They should be repotted in spring, and again just before housing in autumn if the soil has become sour, or the plants require it. Old varieties are increased by division, each crown forming a plant: this should be done in spring.

Chinese primroses are never troubled by insects, and do well in any atmosphere if not too cold. They are tender plants, and will not bear chill or frost.

Seed ripens freely, but cannot be depended upon to produce the parent variety.

Cuphæa platycentra, sometimes called "cigar-plant," is a very pretty plant, of easy culture in the house. The flowers are scarlet, purplish-black, and white; and are so freely produced, that we may say the plant is never out of bloom. The foliage is small and neat, and the whole plant is seldom more than six inches high. Plants may be procured of any florist. Cuttings are easily rooted, and often bloom when not more than an inch high. The plant thrives in good garden-loam, and needs no care beyond moderate waterings and occasional syringing. It is a native of Mexico. There are many other species of *Cuphæa*; but none are especially suitable for parlor-culture.

E. S. R., Jun.

GLEN RIDGE, December, 1868.

(To be continued.)

EVERGREENS FOR THE WESTERN PRAIRIES.

(Concluded.)

IN a former number, I spoke of the utility, beauty, and necessity of planting timber on prairie-farms, along the roads, and streets of towns. These evergreens are going to be so valuable in this country, that a slight glimpse at the mode of raising them from the seed may be interesting. I have not much experience in raising them from seed, but have planted a good many two years old and up to eight feet high. I have visited the nurseries where they are raised from the seed.

Our climate is too hot and dry to raise evergreen seedlings in the open air and scorching sun : therefore it is necessary to shade some to break at least half the rays of the sun. At Mr. Douglass's nursery, at Waukegan, Ill., there are three modes of shading. First by lath, consisting of light strips of pine four feet long, such as are in universal use for building. These are nailed to two short strips of inch board, or two laths turned crosswise : so the section of lath is four feet square, light, and easily removed for weeding. The bed is slightly rounded up so that the water will run off, and boards or poles elevated six or eight inches along the side of the beds to place the laths upon. The space between the laths is open sufficiently to exclude only half or two-thirds the rays of the sun.

Second, shade by setting up tall posts, and nailing strips of board seven feet high, across which poles are placed, then covered with brush, so high that they can work underneath.

Third, shade by sticking up brush by the sides of the beds, so as to shade. If access could be had to the evergreen-woods, it would be the best brush-shade. The laths can be used several years. Shade is indispensable ; for the sun will scorch the young and tender plants, and kill them nearly all. Again : they are in danger of " damping off ;" that is, in a wet, warm time, they rot. Remedy : sprinkle dry sand among them.

The soil should be light, dry, and tolerably rich, with a mixture of compost of leaf mould and manure. The beds are made four feet wide, rounded up slightly to turn off the water, with a passage eighteen inches between. The seeds are sown broadcast by hand, and raked in. In this way a great

number will stand upon a rod of bed, — about a million plants to the acre. I saw over six acres of these evergreen seed-beds at Mr. Douglass's nursery. They are also raised to considerable extent by Samuel Edwards, near LaMoile, Bureau County, Ill., and by many other nursery-men in the West.

They need a little winter-protection for two or three winters by a little brush, straw, or hay. They are thinned out from year to year by sales and transplanting; and should all be transplanted at three years old: they are then about six inches high, some more, some less. They may now be transplanted to nursery-rows two feet apart and eight inches in the row, where they can stand two years; then transplanted a second time to rows three or four feet apart, and one and a half in the row. Nursery-men are apt to crowd their stock of all kinds too closely together to give it room to spread itself. It is true that nursery-stuff grown tall and slim will pack much better in boxes when sold; but let me caution purchasers against getting too many trees of any kind into a small box. The best part of your purchase is large boxes for a small number of trees, closely packed; in other words, spreading, stocky trees.

The Norway spruce grows and transplants about as well as any evergreen when it is young, and makes the hardiest and best shade and wind-break when it is older. And yet the white pine and Scotch pine are not inferior to the Norway spruce, and grow a little more rapid. After two or three transplantings, in six or eight years they will be four to six feet high, and should be set in their permanent place, where they will the second year, if properly treated and well cultivated, commence a rapid growth of two to three feet a year, and their branches spread nearly as far as their height. I have seen the Norway spruce, sixteen years set out, that had spread thirty feet from tip to tip of its branches, and about twenty-five feet high, — a thing of great beauty. Ye that dread the bleak winds of winter, think of such wind-breaks, and set them about your buildings, orchards, and farms.

How often I have seen the beautiful little evergreens set in the grass-plot near the house! The grass and weeds should all be kept away for several feet around them, and the ground cultivated as nicely as for any garden vegetables or flowers. Some annual flowers may be sown about them to beautify and cover the ground.

If the farmer wishes to set many, they should be bought at one to two feet high ; which can be had of some of our wholesale nurseries in the West at ten to twenty dollars per hundred, and sometimes less. I have found spring the best time to transplant. Be very cautious not to let the roots dry in the least. In this way, I find them but very little more difficult to transplant than the apple-tree.

I cannot close this article on evergreens without calling attention to the European larch (though not an evergreen) as the most profitable timber-tree for the farmer to plant. Its growth is as rapid as any of the evergreens, and, for a few years from the seed, more rapid. It is as durable as red cedar : it will make the best of posts, stakes, poles, railroad-ties ; and it is available for almost all uses that wood is put to. We shall soon get up a fever for the European larch nearly equal to that of the *Early Rose* potato ; and that is high enough.

The era of tree-planting is coming ; and they will soon spread over, beautify, and benefit this prairie region ; and I believe the seeds of the evergreens will in time begin to come up along the fences and hedges in broken lands and woodlands. In parts of my nursery, the white cedar is already numerous, two or three years old, self-sown. *Suel Foster.*

MUSCATINE, Io., Sept. 19.

WISCONSIN FRUIT AND TREES FOR 1868.

THE year 1868 is on its last quarter. Its history is written. Its ups and downs are recorded in a variety of ways, but mainly unsatisfactory to the grower. The fact of no fruit, and, in many cases, trees dead, is apparent. The cause is not so easily discerned, and the remedies mostly theoretical. In some instances, we know of whole nursery-blocks of one and two year old trees which have been swept away by the winter and spring of 1868, vineyards "clean gone forever," and vines not only destroyed in the nursery, but those several years planted in the vineyard. The cause of all this is owing mainly, we think, to the extreme drought of 1867. At the setting-in of winter, the ground was parched and dried to a great depth. This was

followed by a very open winter and a very cold one. There being less moisture in the ground than in the plants, the former drew from the latter the little it had. The last week in February was very warm: doors were open, and windows up. Wheat was being sown in the fields. I sowed peas and lettuce in my garden: frost all out of the ground. But the scene quickly changed. A week of such warm weather did incalculable damage; for it was followed by a severe frost. The mercury went down, down, almost out of sight. I was warned of the danger of damage; but my grapes were covered. I feared no evil, and slept on. Vines uncovered well; wood sound, and of good color. Growth commenced; made about three inches, and there it stopped. On the 15th of June, I examined the following sorts,—Concords, Isabellas, Allen's White, Isabella, Delaware, Iona, Anna, Creveling, Hartford Prolific, Rogers's Nos. 4, 9, 15, 19, Ives's Seedling; and though all had started, and made a few inches of new wood, yet, without exception, the roots were dead and rotten. A single exception was found of an Iona, planted Nov. 1, 1867, and protected the same as the others. It was alive, and has made a very good growth this summer. A few of these vines have made new roots, and, by a late growth, have now plenty of wood for some fruit next season. To sum up, the cause was the previous dry summer of 1867; severe open winter of 1867 and 1868; extremely warm weather in February, followed by almost unprecedented cold. Vines and trees were *root-killed* where unprotected by snow. This was the cause. The remedy lies in *heavy mulching*. The common soil has been considered as the very best; but the past winter teaches us differently. A Concord vine, so situated that its protection was leaves, remained unharmed. Mulch thoroughly with straw or litter; bend vines to the ground, and cover entire; sprinkle on a little soil; another coating of straw or litter; and over all, if danger is apprehended from mice, cover with soil. Give the same practice, and form of protection, to the roots of the orchard-trees. I do not mean, as many suppose, by protection, a little handful thrown down at the immediate proximity of the tree; but cover the ground as far from the body as the limbs extend, and even farther if it is a young orchard. This is the remedy for those living in a severe, changeable climate to adopt. Apply it early; for there is no certainty of snow.

O. S. Willey.

MADISON, October, 1868.

PLANTING OF TREES.

As many people advocate the planting of trees in the fall, I wish to give my experience in that direction.

Last fall, I wished to set a number of apple-trees of the Ben Davis and Wagener varieties ; and, as I did not have them of a sufficient size to suit me, I sent to a neighbor nursery-man and bought them, — a hundred and fifty Ben Davis, and fifty Wagener. About one-fourth of these trees were set last fall ; and the rest were taken to a hillside, and buried root and branch with earth, — the roots about a foot deep, and the tops but lightly. These trees came out of the ground in the spring in good condition, and were set early, and have made a fine growth during the present season : the loss, I think, was but five out of a hundred and thirty-five. But, of those that were set last fall, nearly all died ; and the balance were killed nearly or quite to the ground.

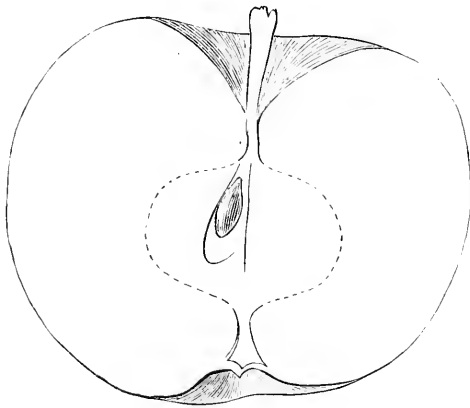
The cause of so great a loss of the fall-planted trees is attributable to the extremely dry winter that followed. The ground was very dry when the planting was done ; and, the drought continuing through winter, the dry air and dryer ground absorbed all the moisture from root and branch. Even trees standing in the nursery were lost by the thousand from the same cause.

I am an advocate of procuring nursery-stock in the fall ; but it is much the safest to bury it till spring, and then plant early. Trees treated in this way can be kept through the winter in much better condition than if left in the nursery. And then the man who procures his trees in the fall has the advantage of his more tardy neighbor who waits till spring, and takes the cullings of the nursery, and consequently a much poorer class of trees, and probably at the same price.

Ira Phillips.

NEW APPLE.

TENDERSKIN APPLE.— This variety, supposed to have originated in South Carolina, was received from J. S. Downer and Son, Fairview, Ky. Tree sufficiently vigorous, healthy, and productive ; limbs twiggy ; fruit medium, flattened, conical irregular ; surface smooth, waxen yellow, covered with lake, splashed darker, and overspread with a heavy bloom, resem-



bling the Northern Spy in its coloring ; dots scattered, gray ; basin abrupt ; eye medium, closed ; cavity wide, green ; stem long ; core regular, closed ; seeds long, plump, dark ; flesh deep yellow, breaking, tender, fine-grained, juicy ; flavor sub-acid, rich, aromatic. Use, table ; quality, very good ; season, early winter. This is a very promising variety, especially for the amateur.

UNPRECEDENTED PROPAGATION OF THE EARLY ROSE
POTATO.

THE high price of the Early Rose Potato, and the strong commendation of its qualities, induced me to purchase of B. K. Bliss & Son six pounds in March, 1868. Potatoes at a dollar per pound will warrant propagation under glass. I ordered the tubers to be cut into single eyes, and to be planted in a box in the propagating-house. As soon as the eyes had made a growth of two inches, they were taken off precisely as dahlia-cuttings are taken, or like the cuttings of verbenas, which may be a more familiar example to many. This process commenced about April 20. After the first batch of cuttings was taken, a new set of shoots developed from the tubers; and, in some cases, three or four shoots were obtained before the tubers were potted from the box. As these tubers were put in thumb-pots, and, during the pressure of spring nursery-work, were kept too long in this confined space, though they were planted in open ground about the 20th of May, yet it was too late for them. Concluding that the pot was to be their limit of growth, they had determined their course,—to ripen up their new and beautiful little tubers about the size of a Minié-ball, and then retire from the field. Consequently, I got no potatoes of any size directly from the original six pounds of tubers. But to return to the cuttings. As stated, the first batch was obtained about April 20. These were placed in the sand-bed of my propagating-house, having a bottom-heat of about 75° Fahrenheit. The temperature of the house was kept about 10° lower; and, as the face of the roof is toward the north, there was little trouble with the light and heat of the sun throughout the month of May. The cuttings rooted with great certainty in six to eight days, and were at once removed to thumb-pots. For another week they were kept in frames, until the roots were well out, so as to hold the earth as a ball when turned from the pot. They were then planted in drills in the open field, three feet apart, and one foot in the drill. As fast as these plants made shoots which could be taken without serious loss to the parent-plant, they were removed, and placed in the propagating-bed, as before. Thus the process was repeated as late even as to the 5th of August. At first, it was from a small begin-

ning, and, of course, a slow progress. But, as the case came under the rule of geometrical progression, on the 20th of July we reached the limit of capacity of our propagating-bed, which was fifteen thousand potato-cuttings; the leaves being large, and requiring space. The total number of rooted plants was about seventy thousand from the six pounds of tubers. During the unusually warm weather of June and July, it was somewhat difficult to sustain the soft, succulent growth. The cuttings flagged and wilted. It was necessary to shower the bed, and keep the house close, preventing any exhausting draught of air. Still the slight heat from the water-pipes required to keep up the *bottom-heat* made the temperature of the house excessive at times. We resorted to mats on the roof as a shade. In spite of all efforts, from ten to twenty per cent of the cuttings would damp off during the warm season.

The cost of this process can easily be estimated. Three men can prepare and put into the bed about eight thousand cuttings per day. They can pot from the bed about half that number. And again: they can plant in the field about four thousand. In other words, a day's work of one man will make the cuttings and pot and plant in the open field about five hundred and thirty-three plants.

And now for the results.

The early plants exceeded my most sanguine expectations; becoming established at once, and developing tubers surprisingly. It required but forty days for a potato-top of two inches in length to root and develop and mature two or three large-sized tubers. On account of the continued process of taking cuttings, none of my plants had a full trial. The actual yield of those planted up to July 30 was at the rate of a hundred and sixty bushels per acre, of full size. But very much the largest part of my crop was planted after Aug. 1, not with any expectation of obtaining large seed, yet with confidence that small and healthy seed-tubers would be the result. In this I have not been disappointed. Indeed, the result would have much surpassed my expectation, had not the season proved extraordinarily cold and wet during the months of September and October. About the middle of September, a cold north-east rain prevailed, and a sudden change came over every potato-field. All kinds rotted more or less, many fields being not worth digging. My crop, being late, was in

just the most susceptible state, and it suffered severely. A large quantity could not be picked up and measured. Of those which were gathered we had eighty bushels of large and sound tubers, besides several bushels of sound late-planted seed, varying from the size of a Minié-ball up to an English walnut. It is not fair to reckon these by measure; for a bushel will count by thousands. It was a disappointment that an experiment for the largest increase of a crop from a given amount of seed should be disturbed by disease. Still I am inclined to believe the present result is unprecedented; being nearly ten times larger than the hundred-fold of Scripture.

For the sake of comparison, I tried cuttings of Goodrich's Early Potato. Greatly to my surprise, they did not root readily; neither did they develop with any thing like the rapidity of the Rose. The trial was with but one batch, and with only fifty cuttings, half of which failed for some reason. With so narrow a limit of experiment, I cannot speak positively; yet it would seem probable that the Rose is peculiar in the readiness to form tubers. Any one who has had many plants must have noticed bulblets forming on the vines above ground. Certainly it indicates marked productiveness as well as earliness, and excellency in quality. I do not regard my example as any indication of its liability to rot, though this may be true of it. Certainly a variety so early and so tender should not be exposed to the cold storms of autumn, especially in a growing state. The sound tubers which were rescued show no disposition whatever to rot. It is a fair question for consideration, whether this method of propagating the potato can be put to practical use in other cases than the increase of new and high-priced varieties. Upon this question I leave others to speculate: but, upon a correlative question, I will express an opinion; to wit, that the tubers produced from cuttings are as perfect, sound, and vigorous as can be obtained either from seed or from the old tuber. *W. C. Strong.*

BRIGHTON, MASS., December, 1853.

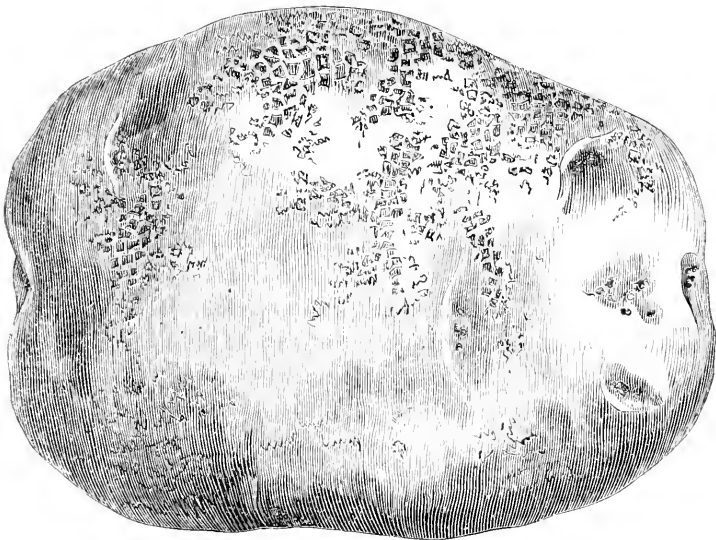
[The unprecedented success of Mr. Strong in the propagation of the Early Rose Potato last season has brought so many inquiries from all quarters, that we have induced Mr. Strong to send us a full and accurate account of his operations, which we are happy to give our readers.]

NEW SEEDLING-POTATOES.

IN fulfilment of our promise to introduce to the notice of our readers all novelties in the horticultural world, we have from time to time figured many new seedling-potatoes.

Few are aware of the progress which has been made in improving this, the most useful of vegetables.

To raise seedling-potatoes is very easy ; but the chances are greatly



against obtaining a new variety of value. Yet, in many cases, success has followed well-directed experiment ; and the agricultural exhibitions of the past year have shown how great the improvement of the new over old varieties. Early Goodrich and Harrison are now too well known to need description. Early Rose has made its mark, as its merits well deserve.

We propose to figure during the coming year many new varieties of merit or promise ; and, the present month, offer an illustration of Breese's Prolific.

Its history is as follows : In 1861, the original plant was raised in Hubbardston, Vt., from a seed-apple of the Garnet Chili, by Mr. Albert Breese, the originator of the Early Rose.

It is a singular fact, that both the Early Rose and the subject of our illustration came from seed of the same apple.

The vines of Breese's Prolific are of full medium height, bushy, but somewhat spreading ; the foliage is large, and the plants do not set fruit ; the tubers are very smooth, a little long, much flattened ; the skin is a dull white, often rusty ; eyes almost even with the surface, rather pinkish ; the flesh is white, cooks mealy, and of excellent quality. The potatoes are never false-hearted, but full and even.

It matures about three weeks later than the Early Rose.



To the Editor of "The American Journal of Horticulture and Florist's Companion."

Sir. — Can the hardy fruits be most successfully cultivated and produced in the greatest perfection in Europe, that is, in England, the northerly parts of France, Belgium, and portions of Germany, or in the north-eastern parts of the United States, — taking Massachusetts, lying under a somewhat similar latitude as the part of Europe above referred to, and also as being, in respect to soil and climate, fully an average, if not above, the other New-England States, as representing them, — is a question sometimes discussed. And occasionally a suggestion has been made, that the disappointment experienced by American fruit-growers, on finding that new varieties of fruit imported from Europe prove, on trial, worthless, may arise from the effects of a change of soil and climate, without being necessarily the result of fraud and deception on the part of the producers of these varieties. As these are questions of some interest, and, in one respect, not wholly without importance, I venture to give you my views concerning them.

As I do not remember of ever tasting in Europe the varieties that have caused the disappointment in America referred to, upon the suggestion above alluded to I have nothing to say, possessing no facts that would have any bearing upon the subject, unless the remarks that I may make upon the question first above stated may incidentally have some reference to it.

The general opinion among cultivators in Massachusetts, so far as I have heard it expressed, is, I think, that the various kinds of hardy fruits — unless it may be grapes — can be as successfully cultivated, and brought to as great perfection, in Massachusetts as in Europe, if not more so. As some considerations

have brought me to a different conclusion, I proceed to state the reasons that have led to its adoption.

I presume it will be admitted that soil and climate exercise a powerful, if not a paramount, influence upon the vigor and growth of plants, as well as upon the perfecting their fruit; and that, where the soil and climate are most congenial to them, such can be most successfully cultivated, and their fruits produced in the greatest perfection.

At present, I set aside all considerations arising from a difference of soil. I suppose that a difference does exist in that of the two regions referred to; the rocks of one being generally limestone, as those of the other are granite; but as I do not know the extent of this difference, or exactly in what it consists, I leave it out of the account, and assume that there is nothing in the soil of either that presents any serious obstacle to successful cultivation. With respect to the climate, however, it seems to me very different.

The climate of Massachusetts, and of all the north-eastern parts of the United States, is harsh and severe. The winters are long, with often intense cold. It is not unusual for the mercury, by Fahrenheit's scale, to fall to twelve or fifteen degrees below zero, and in exposed places still lower; for the earth to be frozen to a depth of three feet or upwards, and ice to be formed of fifteen inches in thickness; while sometimes, but not always, during the most inclement weather, a covering of snow affords some protection against its effects. The intense cold, however, is not continuous: periods of mild weather often occur, sometimes of sufficient duration to melt the snow and ice, and extract most of the frost from the ground, followed again by severe cold. If the winter is cold, the summer is often correspondingly hot; the mercury not unfrequently rising to 90° or upwards in the shade; the period of great heat occasionally accompanied by dry weather, when no rain, unless it may be a slight shower, falls for weeks in succession, creating drought, that bakes and dries the earth to a great depth, and burns and blasts the foliage, so that it ceases to perform its appropriate functions. — the summer, no more than the winter, being free from sudden and great changes of temperature. Now, this is, as I believe, a very unfavorable climatic condition to successful cultivation. The excessive cold of winter is the cause of much damage. It is a common opinion, and though not, perhaps, literally exact, substantially true, that the peach-buds are destroyed when the mercury falls to ten degrees below zero; and I am inclined to think that the injury to young trees, that exhibits itself in the spring, distinguished as blight, fire-blight, frozen sap-blight, or like name, is the result of excessive cold in the preceding winter. The changes of temperature in the winter by freezing and thawing, and the consequent contraction and expansion of the ground, cause much injury by the lifting and heaving young trees, to the damage of the tender fibres and rootlets; sometimes throwing the roots entirely out of the soil, and then causing the destruction of the tree. The great heat of summer, especially when attended by severe drought, is also not without injurious consequences, that, if not permanent in their effects, require more than one favorable season to wholly obviate.

Now, these evils from climate are those from which that of Europe is com-

paratively, if not entirely, exempt. The winters there are, it is true, often cold, disagreeably cold; but it is not the excessive cold of the north-eastern parts of the United States. The mercury, probably, rarely if ever falls to zero of Fahrenheit. The ground freezes to the depth of some inches, ice forms of four or five inches in thickness, and that is all; while even this degree of cold is not of long continuance, and, when once passed, rarely again occurs. By February, the persistent signs of approaching spring make themselves manifest. The summer is frequently hot. A rise of the mercury to 80° and upwards is not unusual; but it is not the dry, burning heat experienced in Massachusetts: and although the average rain-fall for the year is much less, yet the atmosphere in Europe is moister; and, the rains that fall being more equally diffused through the year, the evil effects of heat, accompanied with long-continued drought, are in a great measure, if not wholly, escaped. Cultivators in Europe, no more than elsewhere, are wholly exempt from loss and damage arising from injuries to their trees and plants, but not to injuries caused by the severity of the climate; the climate being, as it seems to me, although not always free from unfavorable conditions, well adapted to the cultivation of hardy plants: in some portions, of course, of its territory, as above defined, more so than in others; in France, rather than in England.

Now, if it be true that climate is an essential element to successful cultivation, and if I am right in my appreciation of that of Europe and of the north-eastern part of the United States, the inference is irresistible, that the different kinds of hardy fruits can be cultivated with more success, and brought to greater perfection, in those parts of Europe to which these remarks refer, than in the north-eastern parts of America.

And this view is, to my mind, confirmed by a comparison of the fruits of the two regions under consideration. In making this comparison, I have necessarily been compelled to compare the fruits of Europe with my recollection of those of America, as it was impossible to bring them side by side (a far more satisfactory way); taking those of the same kinds, and, when I could, of the same varieties; using for the purpose such as are offered for sale by the quantity in the market, and not, in either case, specimens culled for exhibition at horticultural shows or the windows of the fruit-shops. And I give the results of such comparison to be taken for what it may be considered worth; in most instances, the fruits taken being those grown in France, and found in the Paris markets.

I spent the strawberry-season of 1867 in England, — partly in London, and partly in the provinces; and was daily in the habit of eating this fruit, finding them everywhere large, handsome, and high-flavored, superior in all respects to strawberries such as I had seen on sale in the Boston market. On any day during the season, I could have purchased in Covent-garden Market a considerable quantity, at a reasonable price, — strawberries that for size, beauty, and flavor, if placed on exhibition at your Horticultural Society, would, if they did not take the prize, have certainly been powerful competitors for it with those that did: and, although it was contrary to my previous impressions, I was brought to the conclusion, that in England, at least, strawberries were better

than in Massachusetts. It may be that England possesses some peculiar advantages for the cultivation of this fruit; but I have seen it fine also in France and Belgium.

Cherries in Europe are very large and fine, of different varieties, both of the red and black sorts; and are to be found in much greater abundance than in the north-eastern parts of the United States, where, of late years, it has been comparatively rare to find those of good quality. Cherries of superior quality are raised in great quantities near Dresden and the upper part of the Valley of the Elbe, and are abundant in all parts of Europe, where, it seems to me, they succeed much better than in the United States.

Gooseberries are abundant in Europe, and much superior to those that I have seen in the United States, where they are so subject to mildew as to prevent their successful cultivation. But of the other small fruits, as currants, raspberries, &c., I have noticed no difference, in respect to size, beauty, and flavor, between those of Europe and those grown in Massachusetts; and they are, I presume, capable of an equally successful cultivation in both regions. I have occasionally seen blackberries in Germany, that seemed in all respects identical with what is known as the high-bush variety in the United States. I doubt whether this fruit is much, if any, cultivated in Europe. I once saw in a garden some bushes of what I supposed to be the large Dorchester variety; but have never met with it in the market.

Apricots, that are in their season abundant and fine in all parts of Europe, are seldom found in Massachusetts, where it seems as if they could not be grown successfully. Gages and plums of all kinds, of superior quality, are abundant; while, on account of the diseased state of the trees, they can be hardly raised in Massachusetts. And all these fruits, it must be allowed, can be cultivated with much more success in Europe than in the eastern part of the United States. The disease of the plum-tree known as the black-wart, is, I think, unknown in Europe. Although I have looked for it carefully, and made inquiries concerning it, I could never find or hear of an instance of it.

Very fine peaches of the white-flesh varieties, large, high colored, and very beautiful, seem to be every year plentiful in the Paris market; whereas it is exceptional to have them in Massachusetts. And although I think, that, on some of these exceptional occasions, I have seen this fruit more highly flavored there than I have seen it in Europe, yet as it is a regular crop in Europe, and a very uncertain one in Massachusetts, it must be considered as capable of a more successful cultivation in the former than in the latter country.

It would be difficult to say positively, whether pears could be most successfully cultivated in Europe or Massachusetts, as in both they are certainly fine; some varieties, perhaps, better in one, and others in the other country. Pears are, I think, smoother, handsomer, and more free from blemishes, in Europe, than in the United States; and some varieties that can no longer be grown in the latter are still produced of good quality in the former. I have seen fine winter St. Germain's in the Paris markets, where Brown Beurrés, large, fair, and fine, are plenty; while it has been necessary in Massachusetts to abandon the cultivation of both these varieties. The Flemish Beauty, too, is unfit for general

cultivation in the eastern part of the United States, but, in France, is free from spots and blemishes, as well as large and handsome. As an offset to this, perhaps, pears generally take a higher flavor in Massachusetts. And the conclusion at which I arrived was, that, so far as the perfection of the fruit was concerned, pears could be with equal success cultivated in both regions; but whether, as respects the cultivation of the trees, with less liability to injury, and greater certainty of a crop, an advantage of a better climate does not accrue to European cultivators, I am not prepared to decide.

And so, too, with respect to apples, that in many parts of Europe, in England, France, and Germany, are raised in large quantities. What I have said in regard to pears, applies, I think, to them also. It certainly would be difficult anywhere to find apples superior to the Washington, Northern Spy, or even the Baldwin, as I have seen them in Massachusetts; and yet I have eaten a Colville Blanc in France when I thought it equal to them. I am not fond of apples, and do not often eat them; but when I have, occasionally, it seemed to me that in Europe they were generally equal in quality to those met with in Massachusetts, as they certainly were in size and beauty. Whether they are raised with more or less success, I cannot say.

I have said nothing of grapes, because I supposed no one would deny that they are vastly superior, and are raised with infinitely more success, in Europe, than they can be in Massachusetts, or, indeed, anywhere in the United States, unless it may be on the Pacific coast. Indeed, in the north-eastern part of America, *fine* grapes cannot be raised at all, except in houses; and attempts at cultivating the coarse, hardy varieties, are only partially successful. In France, delicious grapes, with large berries and bunches, are cheap and abundant, of both the white and purple sorts, — of the former, Chasselas, Muscat, and Frontignan varieties; and of the latter, different kinds, — the most common being what I took to be Black Hamburgs, but called Frankenthals by the dealers.

I know that these comparisons are merely the result of an individual judgment; that they are no proof; and as such they are not offered, but are given merely to show one of the grounds that with me has led to the conclusion, that the different kinds of hardy fruits can, taking them in the aggregate, be cultivated with most success in Europe.

Besides the advantages growing out of a better climate, there is another that cultivators of fruit in Europe possess over those of the north-eastern parts of the United States; and that is a comparative freedom from noxious insects destructive to vegetation. I have never but once seen trees whose foliage had been injured, as I thought, by insects; and those were but a few apples, I believe, in a garden in the extreme south of Europe. Insects that commit such devastation in Massachusetts — caterpillars, cankerworms, &c. — are rare, if they are to be found, in Europe; at least, I have never seen them, or observed any marks of their ravages.

Joseph S. Cabot.

FANCY AND BEDDING PANSIES. — For many years, the pansy has been grown as a florist's flower in England; and all which did not fully come up to a certain standard were rejected as worthless.

Now, we must confess we have never been willing to adopt these rigorous rules; and, let the pansy depart as far as it may from the florist's standard, we have always loved the flower, whether it grew at will as the "lady's-delight" of



old gardens in its primitive form, the true *Viola tricolor*, or whether it was developed to wonderful size by careful culture.

A more healthy feeling has lately been developed in England in relation to the pansy; and the introduction of the so-called "fancy varieties" has given a new impulse to its culture, and in a different direction. Thus, latterly, these fancy pansies have become very popular, and have developed into countless forms of color and markings. Many, also, do good service in England as bed-

ding-plants. For this latter purpose, they will probably be of little service with us, as the hot, dry weather of summer would prevent their developing good flowers, and the bed would be bare and ragged just at the season when we wished it to show to best advantage. There is, however, reason to hope, that, if our florists would give attention to the development of this flower, varieties might be produced which would stand our climate. Certainly, experiments in



this direction are worth trying.

We are led to these remarks by the perusal of an article in "The Gardener's Magazine," from which we give some general cultural directions, and to which we are indebted for the illustrations accompanying this article.

Pansy-seed is generally sown in summer for spring-bloom; but seedlings coming up as late as the middle of September will do well if properly cared for.

The following rules from extracts from "The Gardener's Magazine" will be

of service ; merely remembering that those applicable to the south of England are suited to the latitude of Baltimore ; and that, in New England, we cannot plant out our pansies until May. In our Northern States, also, the pansy is best wintered in a frame, either by transplanting, or by covering the bed.

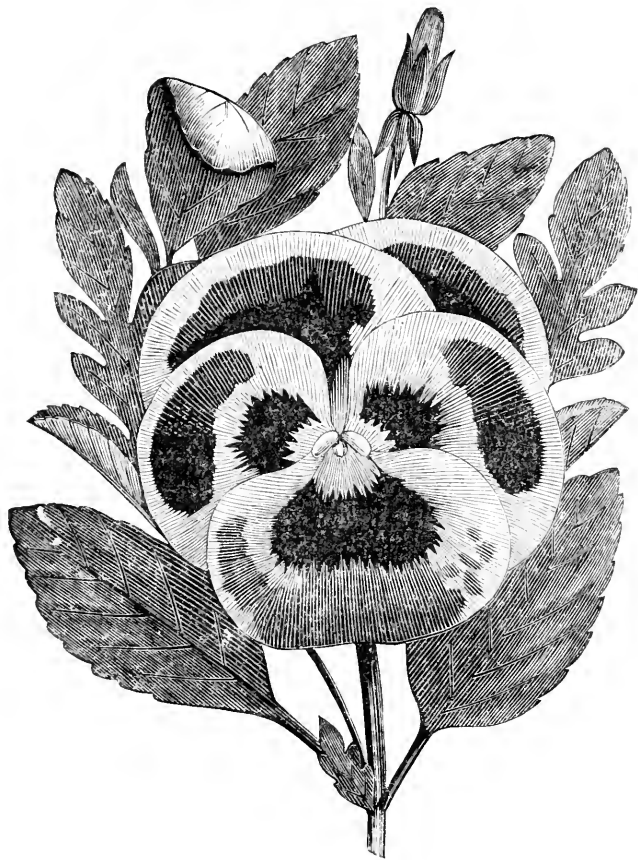
It sometimes does well merely covered with leaves, but, if we have an open winter, is very liable to damp off.



“ Take a common garden-frame, and fill it to within a foot of the glass with rough brick rubbish or cinders, and place on this about three inches of light soil. Sow the seed ; and, to avoid watering until the seed is up, cover the frame with mats ; and, as soon as the young plants are seen peeping through, expose them to the light, and admit air. The pansy is a perfectly hardy plant, and, when dry, will stand any amount of frost, but suffers severely from damp. Under the treatment I have indicated, they will become robust little plants ; and, with plenty

of ventilation in fine weather, they will be stocky little fellows, about an inch in height, by March ; when they should be planted out, about nine inches apart or so. What a supply of flowers these will give !

“ In order to show how to grow pansies generally, I cannot do better than give, in brief, a practical code adapted to the various soils and climates of this country. In the south of England, where the heat is greater frequently than in



the north, it is best to select a shady situation where there is a free circulation of air. If such cannot be found, then place them elsewhere, but always where there is a free admission of air. Any garden-soil will suit them ; but, if poor, a moderate supply of very rotten manure should be dug in ; and the pansy revels in leaf-soil when mixed with the ordinary soil and a little manure. Plant out early in April at the latest. Many persons do not think of buying and planting until May : which is a very great mistake ; for the plants should be established

before they have to endure so much hot, dry weather. These remarks are intended for those who have not planted; but autumn-planting is frequently practised in the south, and is best, simply securing the plants from injury from wind by pegging them down, and surfacing the bed with a mixture from underneath the potting-bench, run through a coarse sieve, or just making up a mixture of common soil and leaf-soil for the occasion. In the south, it is most easy to winter them out of doors in this way, if slugs are looked after; but the real work of preserving them comes on with the hot June and July weather, when, as pansy-growers know to their sorrow, they seem to melt under old Sol's influence, and plants which were in full health in the morning are prostrated before night. I find the best safeguard against such mishaps is to frequently give the plants a rose-pot watering in the evening, and then stir the surface early in the morning, and give a slight top-dressing of the soil I have before alluded to. This keeps the roots moist and cool; and, by keeping the shoots well pegged down, this occasional surfacing induces the side-shoots and young centre-shoots to root freely, not only prolonging the bloom, but, in the autumn, yielding a large supply of healthy young plants, without the trouble of putting in cuttings. Just take up the plants, pull them to pieces, and plant the young rooted short pieces. If the weather is very scorching, a few branches of evergreens stuck into the soil amongst the plants will help to keep them cool. In the north, here, we have great advantages in the cooler weather of summer; but we have terrible disadvantages in some districts in the severe winds we get, especially the cold east and west winds of February and March. I dare not trust my plants, of which I annually grow thousands, out of doors, but take them all up in October or November. After treating them in the manner I have recommended, — viz., by top-dressings, and pegging out, — we take all up, pull them to pieces, throw away all old growth, and plant in cold frames all the young rooted pieces. These frames are filled with brick or other rubbish to within fifteen inches of the glass, and with about six inches of good soil: the plants are near to the glass, and are kept as dry as possible in wet weather, and as hardy as free ventilation can make them.

“ Pansies will stand any amount of frost if dry, but not frost with damp so well. In fact, more, far more, pansies are lost from damp and neglect than by frost. With such frame-treatment here, they do well, making stocky plants for spring-planting. We keep them well aired and very hardy, never covering the glass with mats or other covering, no matter how severe the weather, but, as I said before, keeping them as dry as possible, and looking well after the removal of damping foliage. Cuttings can be put in at various times through the summer, under hand-glasses, or in cold frames under a north wall; keeping them close for a fortnight or so, but looking after damp.

“ It will be as well to state, that, in very hot, dry weather, the pansy suffers sometimes from attacks of the black aphid. The moment this appears, they should be washed with tobacco-water; and the plants must be kept freely syringed and growing freely.

“ What are termed ‘bedding-pansies’ are an entirely distinct type; and of these I entertain a very high opinion as bedding-plants. Some of the bedding-pansies now in use are simply selected free-blooming forms of the ordinary

English show-pansies. I grow here several kinds, partaking more of the character of the small Cliveden or Trentham blue pansy, a very dwarf compact-growing kind, giving a profusion of bluish-lilac flowers, which are very small, from early in April to November.

“Why not, then, use bedding-pansies, when the supply for each season can be so easily kept up by parting the old plants in the autumn? I cannot too strongly press the use of these bedding-pansies on the readers of your magazine, because not only are they so easily cultivated, and are so useful, but they really give us from three to four months more flower than our ordinary bedding-plants.

“One word with regard to soil for them. A moderately stiff soil suits them better than a very light soil; and, in fact, *too light* a soil does not do for pansies generally.”

TRICOLOR PELARGONIUM STAR OF INDIA. — Of all the flowers of the present day, there is hardly one, perhaps, so popular, so universally admired, and so generally grown, as the tricolor-leaved geranium, *Mrs. Pollock*; while the varieties that are from time to time put forward will soon create so much confusion as to make weeding out an absolute necessity. Thus we have now before us two catalogues, in one of which we find forty new varieties, and in another eleven, varying in price from one to three guineas, and of necessity many of them presenting so great a similarity to one another, that only the eye of a very practised connoisseur would be able to distinguish them. Besides, there are few firms of any eminence who have not had one or more of this favorite class to send out: so the kinds will soon be numbered by hundreds.

Among those varieties which we have seen this season, Rollison's *Star of India*, which we now by their permission figure, seems to us to be one of the best. The coloring of the foliage is good, and the habit of the plant excellent. It partakes more of the character of *Sunset* than of *Mrs. Pollock*, the edges of the leaves being deeply cut, and the surface considerably more smooth, while the coloring is richer than either; the bright crimson flame which breaks in and through the deep maroon band being exceedingly rich. The golden edge of the leaves is very decided, and the green in the centre light and distinct. Messrs. Rollison inform us that the habit of the plant is very free; and this we should gather from our own plants, which are long-jointed and branching.

We have found in the cultivation of this very beautiful class of plants that they delight in a rich, friable soil, in plenty of light and air, the sun seeming to bring out the brilliancy of their leaf-coloring; while, as a rule, their roots are more delicate than the ordinary general varieties. The color of the flowers (which are of good form) is a rich, bright, scarlet-crimson; the truss being good, and the flowers freely produced. — *Floral Magazine*, pl. 392.

IBERIS CARNOSA. — A pretty little Alpine plant, of dwarf habit; the whole plant frequently being only two inches high. The heads of flowers are large and very showy, of a shaded purplish rose and white, and so large as often to eclipse the whole plant. The leaves are small and fleshy. Native of the valleys of the Pyrenees. — *Ibid.*, pl. 379.

EARLY SPRING-BLOOMING SCILLAS. — Scillas are such sparkling gems amongst early-flowering spring-plants, that now, as planting-time approaches, we gladly transcribe, from an article recently published in "The Gardener's Chronicle," the following particulars respecting them. Some time since, a question arose as to the correct names of these beautiful little vernal jewels; and, with a view to clear up the matter, living specimens from various gardens, as well as the dried specimens in the Kew herbarium and the published figures and descriptions of various authors, were examined by our friend and colleague Dr. Masters, with the following result: —

1. *SCILLA BIFOLIA*, Linn. (Bot. Mag., t. 746). — Bulb ovoid; leaves 2-3, spreading, recurved, linear lance-shaped, channelled, terminating in a short blunt cylindrical point; scape as long or longer than the leaves; bracts minute; pedicels spreading, the lower longer than the upper; flowers 5-6, blue; segments oblong, obtuse, spreading. This we take to be the type, the nearest to the wild form, intended by Linnæus. There are in gardens several varieties of it, differing in the size and color of their flowers, in the period of their blooming, &c.; and it is a matter of opinion whether or no these are varieties or species. We consider them as varieties of one species, for three reasons: first, that they all have certain characters in common, available for specific distinction; and among them we may mention, as easily appreciable by the gardener, the blunt cylindrical point to the leaf. We take first that variety which expands the earliest, and to which, therefore, the name *præcox* is well applied.

Scilla bifolia, var. *præcox* (*S. præcox*, Willd.; Sweet, Brit. Fl. Gard., 2 ser., tab. 141). — This differs from the type in its earlier expansion, and in its larger flowers, of a deeper blue color; the lower flower-stalks becoming after a time so much lengthened as to form a flat-topped inflorescence. The plant is not very common in gardens, but is sometimes grown under the name of *S. bifolia major*. There is a white form of it.

Scilla bifolia, var. *carnea*, Kunth (Bot. Mag., t. 746). — This resembles the type in all respects, save that its flowers are of a pale flesh-colored tint. It seems to be the *Hyacinthus stellatus flore rubente* of Parkinson, who thus speaks of it: "The difference in this from the former (*bifolia*) is onely in the flowers, which are of a faire blush colour, much more eminent then in the others; in all things else alike."

Scilla bifolia, var. *rosea* (*S. rosea*, Lehmann; ? *S. bifolia taurica*, Regel, Gartenfl. 1860, tab. 307). — This differs from the preceding in the larger size of the flowers, and in the more globose form of the bulb; and may be the plant spoken of by Parkinson as "*Hyacinthus stellatus præcox flore suave rubente*, the early blush-colored starry jacinth," which, he continued, "is very rare, but very pleasant, his flowers being as large as the first (*præcox*), and somewhat larger than the blush of the other kind (*bifolia carnea*)." We believe *taurica* is the same plant with blue flowers.

Scilla bifolia, var. *alba*, Kunth. — Differs from the type only in its white flowers. Parkinson says of this, "The buddes for flowers at the first appeare a little blush, which when they are blowne are white, but yet retaine in them a small shew of that blush colour." He goes on to say, "We have another whose

flowers are pure white, and smaller than the other; the leaves thereof are of a pale fresh green, and somewhat narrower." This latter is the commoner variation of the two.

Scilla bifolia, var. *candida*. — We propose this name for a pure white-flowered variety, the flowers of which are as large as those of *S. bifolia præcox*, or of the var. *rosea*, of which indeed it might be considered as the white-flowered representative, but that it flowers later. It is, perhaps, the *H. stellatus præcox flore albo* of Parkinson.

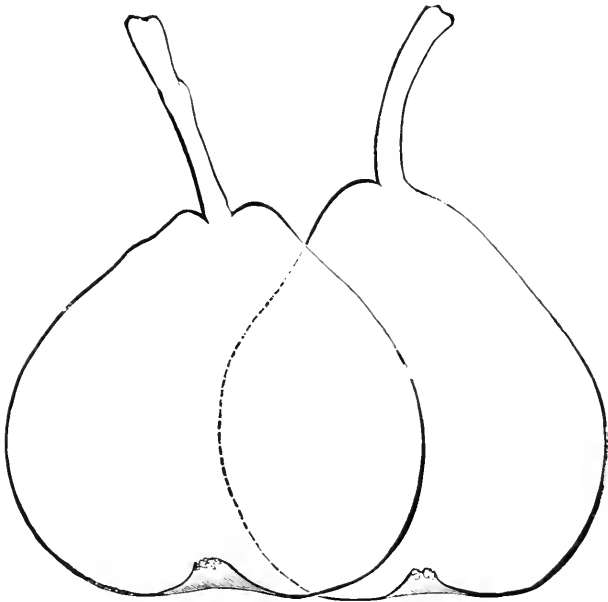
2. *SCILLA SIBIRICA*, Andr. (Bot. Rep., t. 365 (1804); Van Houtte, Fl. des Serres, xvi. tab. 1677. *S. amœna*, Redouté Lil., tab. 130). — Bulb roundish, the size of a chestnut, with a dark rind; leaves four or more, erect or somewhat spreading, flat, strap-shaped, slightly thickened at the point; scapes one or two, flattened, striated, scarcely so long as the leaves; flowers 2-4, or even 6, rarely solitary, on short stalks, horizontal or nodding, bell-shaped, ultimately spreading widely, of a pale clear blue color, rather more intense along the central nerves of each segment. This beautiful species is sometimes seen in gardens and catalogues under the names of *præcox* and *amœna*. It flowers a little later than *bifolia*, but before *S. amœna*; and is one of the most lovely of all spring-flowers, admirably adapted for spring-beds. The headquarters of the species would appear to be in Persia, Asia Minor, &c. Varieties with larger flowers than ordinary, and others with solitary blossoms, are known.

Scilla sibirica, var. *amœnula* (*S. amœnula*, Bot. Mag., t. 2408). — To this form we refer some plants which are smaller than *S. sibirica*, with more ovate bulbs, and paler flowers.

3. *SCILLA AMÆNA*, Linn. (Redouté Lil., t. 298; Bot. Mag., t. 341). — Bulb ovoid or roundish; leaves numerous, spreading, strap-shaped, acute, 10-12 inches long, half an inch wide; scape erect, shorter than the leaves, compressed, two-edged, striated, purplish above; flowers 3-6, dark indigo-blue, in a loose two-sided cluster, horizontal when expanded; pedicels erect, curved at the apex, bluish, half to three-quarters of an inch long, springing from the axil of a very minute whitish bract; perianth six-parted, nearly an inch across when expanded; segments spreading horizontally or reflexed, lanceolate acute slightly concave at the apex; filaments dilated and whitish at the base, blue above; anthers blue; ovary pale yellow, oblong; style blue. A native of Central Europe, the Tyrol, &c., and an old inhabitant of our gardens. Its flowers are not so nodding as those of the preceding; they are also flatter, not so bell-shaped, and of a darker blue: while the ovary, as Parkinson's sharp eyes detected, is of a yellowish-green color, thus giving to the flowers the appearance of a yellow centre or "eye." It flowers in the south of England in April, following close upon *sibirica*.

The species above mentioned have all this character in common, that the bracts at the base of the pedicels are very minute; whereas, in *S. verna*, *S. campanulata*, *S. italica*, and the later-flowering kinds, the bracts are often as long as the pedicels themselves.

SUMMER BEURRÉ D'AREMBERG. — We have often heard from the lips of Mr. Rivers a flattering account of this new seedling pear of his, which fruited for the first time two or three years ago ; but from the fact of it being an early pear, and soon past, circumstances have hitherto prevented us from forming our own opinion of its merits. Fortunately, this season, some of the fruit has reached us in perfect condition ; and from those now before us we furnish a figure and description of this new fruit. The size, as will be seen by the figure, is not large ; and the form is somewhat turbinate, or short obovate, even in its



outline. Skin of a lemon color, slightly veined with cinnamon-colored russet, with a patch of the same here and there, and particularly so round the stalk ; eye very small, frequently wanting, and set very deeply in a deep and narrow basin ; stalk upwards of an inch long, and inserted in a small, round cavity ; flesh tender, melting, juicy, brisk, and with a fine, sprightly, vinous, and perfumed flavor. The fruit does not keep long, as it rots at the core shortly after being gathered : but the variety is a desirable sort at this season ; and, if gathered before it is perfectly ripe, it will, no doubt, keep much longer after being gathered.

The Summer Beurré d'Aremberg was raised by Mr. Rivers from the old Buerré d'Aremberg ; and the tree forms naturally a perfect pyramid, is hardy, and a great bearer. — *Gardener's Chronicle*.

LILIUM GIGANTEUM. — The following is the history of six plants of this lily, which have flowered at Jardine Hall, Lockerby, this season : Three years ago, we had a plant of it in flower in the greenhouse. Being the first I ever had under my charge, I was not quite sure about its propagation ; but, judging by the appearance of them and some young bulbs growing amongst the roots on the surface of the soil, I knew that the old bulb was gone, and that these young ones were intended to become giants in future. Six of these young bulbs I potted, and put into a frame. After they were established, they were set outside, where they remained till frost became dangerous, when they were put into the greenhouse, and kept pretty dry all winter. In May, last year, two of these were planted out in the lawn : the others were shifted into larger pots, and were set outside also. When frost took the leaves of those that were planted out, I covered them with a little dry fern ; those in pots being returned to the greenhouse. In March last, the fern was removed, as the bulbs were beginning to grow, and spruce branches stuck round them substituted. They soon made leaves ; and, in May, the flower-stem made its appearance : both flowered in June, and are now ripening seed. One of these produced sixteen, and the other seventeen blooms, each bloom measuring seven inches across ; and the stem was eight feet in height. Those in the greenhouse commenced to grow in February : two I planted out in March last, when they were in full leaf, just a short time before the flower-stem commenced to grow. These stood twelve degrees of frost, with only a few spruce branches for protection. I have seen the leaves frozen, and hanging on the ground as if quite killed ; but they always recovered. These measure seven feet in height, and on each are seventeen blooms. Two are still inside : these are growing in boxes that would hold about the same quantity of soil as a No. 1 pot. The largest of them produced a stem eleven feet in height, and ten inches in circumference, one foot above the soil. It furnished twenty blooms, each measuring seven inches across : those inside flowered first, those planted in March next, and those that stood out all winter last. By planting in this way, we had a fine succession, as each plant lasted about a fortnight in flower. I may mention that the soil used was loam, rotten cow-dung, and sand, in about equal parts, with a liberal supply of water when the stem was growing. Accompanying this is a photograph of one of my best plants, which will indicate the fine appearance such a noble lily has on a lawn. This lily has flowered in several places in the open ground. The bulb does not die after the flowering is over ; but the leaves disappear in autumn, and are again renewed in spring. The gigantic lily was first brought to notice by the late Dr. N. Wallich, by whom a fine figure of it has been given in his great work, the "Plantæ Rariores Asiaticæ." In the Himalayas it grows in shady places, in rich loam, at altitudes of from seven thousand to eight thousand feet, as at the western base of the Dodecatowli Mountain in Eastern Gurhwal, on the road leading to Lobah ; and in the valleys below Tyne Tiba, on the ascent to Koth, in Western Gurhwal, it is known under the native name, Naltoora. When in perfect flower, it is one of the finest lilies met with in the vegetable kingdom, and is well worthy of more attention than it receives. There is another fine lily common in the Himalayas, though rarely seen in this country, — *L. Wallichianum*, which is also well worthy of at-

tention. It is known under the native name of Gurj Kuml. It has large white-scented flowers, from five to seven inches in length, which scent the air during the rains. — *Observer, in Gardener's Chronicle.*

[A correspondent informs us that *Lilium giganteum* has flowered in the open ground in New Jersey, and stood the winter with slight ground-protection.—*Eds.*]

CULTIVATION OF DUTCH BULBS. — The amateur cultivator has, then, chiefly to remember, in order to insure success, that his treatment of these Dutch bulbs is not so much intended to form the flowers — the bulb-grower has already done that for him — as to liberate them safely from the succulent folds of the parent bulb. The flower or flower-spike is wrapped up within the bulb, and only wants enticing forth from its winter prison-house in such a manner that it shall not appear *en déshabille*. Now, to do this cleverly, the free formation of roots must be induced before the growth of the leaves or flower-stem is excited. This is the turning-point. Get plenty of healthy roots, and, under fair conditions, good flower-spikes will follow: fail to get these, and good flower-spikes are barely possible. A rootless bulb may, indeed, push out its ready-formed flower-stem by feeding on its own substance, even as the felled tree may sometimes clothe itself with branches pushed forth by its self-contained sap; but such developments can be in no sense perfect, and must at length fail from sheer exhaustion. Hence the importance in bulb-growing (and this forms our text for the present), whether in earth or water, of inducing, in the first instance, a profusion of roots, as the means of securing a vigorous development of the flower-spike.

We may usefully reproduce here Mr. Paul's nine rules for the culture of hyacinths in glasses; merely premising, that excellent results may be obtained by this mode of culture; and adding, that, *mutatis mutandis*, the same rules will apply equally to pot-culture, substituting earth for water, and pots for glasses. The rules may be slightly abridged as follows:—

“In choosing bulbs, look for weight as well as size, and be sure the base of the bulb is sound. Use single kinds only: they are earlier, hardier, and generally preferable. Set the bulb in the glass so that the lower end is almost, but not quite, in contact with the water. Use rain or pond water. Do not change the water, but keep a small lump of charcoal at the bottom of the glass. Keep the glasses filled up from time to time. When the bulb is placed, put the glass in a cool, dark cupboard, or other place where light is excluded. When the roots are freely developed, and the flower-spike is pushing into life (which will be in about six weeks), remove by degrees to full light and air. The more light and air given from the time the flowers show color, the shorter will be the leaves and spike, and the brighter the color.”

These directions, it will be remembered, suppose the glasses to be kept, during the active development of the plant, in the habitable rooms of a dwelling, where they should be placed in the window, for light, during the day, and be removed from the window, to avoid risk from frost, during the night. Whether the apartment be heated or not, is immaterial: the only difference will be in the earliness or lateness of the flowers, according as they are or are not stimulated by warmth. — *Gardener's Chronicle.*

NEW PLANTS, 1868. — Among the many new or showy plants figured in the French and English illustrated magazines, the following are especially worthy of notice: —

Lilium Leichtlinii. — A new and very showy lily; flowers drooping; color pale yellow with maroon spots; probably hardy. — *L'Illustration Horticole*, pl. 540.

Epidendrum atropurpureum, var. *roseum*. — A charming orchid, with deep purple flowers, with bright rosy lip; native of Guatemala. — *Ibid.*, pl. 542.

Maranta Baraquinii. — A very fine-foliaged plant, leaves beautifully pencilled with white from a dark-green centre to deep edge of green. Requires stove-treatment. — *Ibid.*, pl. 542.

Gesnera Exoniensis. — A charming species, producing masses of orange-scarlet flowers with yellow throat during the winter. The foliage is dark, rich, and velvety, studded with minute red hairs, which, in some lights, give it an appearance of plush. This is, probably, one of the most valuable of recently-introduced plants. — *Floral Magazine*, pl. 381.

Croton maximus. — A fine species with rich golden leaves with green bands. As they are often a foot long, the beauty of the plant can be appreciated. A stove-evergreen growing in loam and peat. — *Ibid.*, pl. 382.

Pelargonium Mlle. Nilsson. — One of the zonale section, chiefly remarkable for a large truss of delicate pink flowers. — *Revue Horticole*, March, 1868.

Passiflora trifasciata. — A very pretty-foliaged passion-flower, the leaves of which are reddish maroon, purple beneath, and deep green, heavily marked with maroon, above. — *L'Illustration Horticole*, pl. 544.

Calodracon (Dracæna) terminalis, var. *Moorei*. — A charming variety of a well-known plant. The old dracæna has been greatly subdivided as follows: —

1° *Dracæna Vandelli*, pl. — Type and only species *D. Draco* and its varieties.

2° *Cordylina Commers*, pl. — Type *D. reflexa*, Lamarck.

3° *Dracænopsis*, pl. — Type *D. australis*, W. Hook.

4° *Calodracon*, pl. — Type *D. terminalis*, Jacq., &c.

5° *Charlwoodia*, Sweet. — Type *D. congesta* ejusd.

6° *Cohnia* Kunth. — Type *D. Mauritiana*, Willd.

Our plant belongs to the fourth of these divisions, and is a great improvement on what is generally known as "*Dracæna*" *terminalis*. The foot-stalks are blood-red, and all the coloring is brighter. — *Ibid.*, pl. 532.

Dalechampia Roezliana rosea. — This plant owes its beauty, like the *Bougainvillea*, to the bright colors of the bracts. They are of a rich rose-color, and are freely produced. The plant succeeds and flowers well in small pots. A specimen was exhibited by William C. Harding at the annual exhibition of the Massachusetts Horticultural Society. It is a fine plant, but will hardly equal the expectations of cultivators. — *Floral Magazine*, pl. 373, 374.

Quisqualis pubescens. — A charming climber, with rosy flowers. It is a stove-plant, seldom attacked by insects, free-flowering, and desirable. — *Revue Horticole*, February, 1868.

Rhododendron Ravellii. — A hybrid between *R. arboreum* and *Dahuricum*. Flowers fine scarlet, of medium size; being larger than one parent, and smaller

than the other. The plant has the early-blooming quality of *R. Dahuricum*, and, should it prove hardy, will be a great acquisition. — *Ibid.*, May, 1868.

Rhododendron præcox. — A hybrid between *R. ciliatum* and *R. Dahuricum*, valuable for its producing a profusion of light-purple flowers very early in the season. It may prove hardy, but, if not, would be useful for forcing. — *Ibid.*, June, 1868.

Lilium Thompsonianum. — This pretty Indian lily is well worthy of cultivation. It is not hardy, but will well repay pot-culture. The flowers are very freely produced on long spikes, and are of a pinkish purple. — *Ibid.*

Alternanthera amabilis. — A beautiful little variegated plant, charmingly effective for borders; lively in color, and altogether desirable. — *L'illustration Horticole*, pl. 558.

Lasiandra macrantha — A fine stove-plant, producing very large deep-blue flowers. This plant is especially valuable for flowering when very young; plants four or five inches high having six or seven buds and flowers.

It is also known as *Pleroma macrantha*. — *Florist*, September, 1868.

Saccolabium ampullaceum roseum. — The finest variety yet introduced; flowers bright rose, and foliage beautifully marked. A stove-orchid from Moulmein, requiring basket-culture. — *Floral Magazine*, pl. 393.

Clematis John Gould Veitch. — A fine blue double-flowered clematis, imported from Japan by Messrs. Veitch. It is a very showy plant, and worthy of extensive cultivation. — *Ibid.*, pl. 394.

Azalea Sir Robert Napier. — A greenhouse azalea of the deepest shade of crimson yet produced, of good form and substance, and a great acquisition. — *Ibid.*, pl. 395.

Hybrid Perpetual Rose Duke of Edinburgh. — One of the best new roses of 1868. An English seedling raised by Paul and Son; color glowing crimson, of fine form and good substance. It gives promise of being a popular variety. — *Ibid.*, pl. 389.

THE October number of the Journal mentions an award of a gold medal given to a gardener at Melun, France, for a hundred and ten varieties of *pelargonium zonale*; and in "The Gardener's Monthly" of the same month, in a report of the July show of the Royal Botanic Society at London, we cannot find a single geranium, but a great many pelargonii.

Now, this may be all very well for France and England: but we in America will yet a while have to adhere to the geranium; for, according to an article in the August number of the Journal, written by a distinguished cultivator of "new and rare plants," we shall have to contemplate the existing spectacle of "every old lady in the land up in arms, and young ones too," against such a perversion of names, such an affectation, such a robbery. And as the mandate from the distinguished cultivator of "new and rare plants" has gone forth to the horticultural world of this country, that it is to be hoped, "for the dignity of the trade," that no "nursery-man or florist" will be "servile enough to imitate this change," we would simply take the liberty to give you a friendly warning not to encourage such "trenching upon dangerous ground" by publishing European reports.

without the necessary explanation, that what our friends across the Atlantic call pelargonium is merely what we, for the sake of "the dignity of the trade," and for the general pacification of "every old lady in the land up in arms, and young ones too," are compelled to call geranium.

If, however, there be some "servile enough," and some not sufficiently intimidated by "every old lady in the land," to follow those horrible "innovators," let them read the already-mentioned article in the August number of the Journal, and reasoning of the most lucid order will convince, nay compel, them to own, that as long as they are "content to call a shovel a shovel, and a spade a spade," they must be likewise content to call a pelargonium a geranium. F. G.

YONKERS, N.Y., Oct. 29, 1863.

NEW-ZEALAND SPINACH (*Tetragonia expansa*).—In ordinary wet seasons, this spinach may not be so much wanted, as then all sorts of green vegetables are abundant and good. Nevertheless, as we are never sure of what kind of seasons we are going to have, it is well to be prepared for all contingencies. To those who are fond of spinach, it is invaluable. Whilst ordinary spinach fails to grow in summer from excessive heat and dryness, a score or so of plants of this New-Zealand spinach will produce quite an abundant supply for any ordinary family, and that through the hottest and driest months of the year.

Its cultivation is simple. The seeds should be sown in a little heat in April or May; and the plants put out in June, in ordinary soil, about a yard apart each way. It is a rapidly-growing plant; and, although seemingly planted at a great distance apart, it soon covers the ground. The leaves are picked from it in the same way as those of ordinary spinach, or, when plentiful, the points of the young shoots, and cooked in the ordinary way.—*B., Middlesex.*

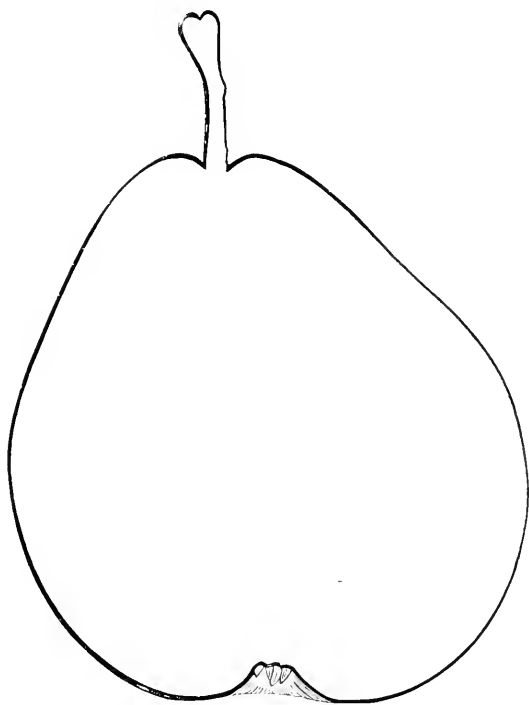
AMARYLLIS SEED-SOWING.—The seed should be gathered when ripe; and we prefer to sow it at once in pots well drained, and filled to within an inch of the rim with a compost of two-thirds rich yellow loam and one-third sandy peat. We then put on a little of the same kind of soil, but finer and dry, make the surface even by patting it with the bottom of a flower-pot, scatter the seed over it rather thinly, and cover with a quarter of an inch of fine soil; the least possible depth being left to hold water. The pot is then placed on the shelf in a stove; and it is not watered until the beginning of February, when the soil is moistened by a gentle watering. We then plunge the pots in a hot-bed, and encourage growth, keeping the soil moist. The pot remains in the hot-bed as long as there is any heat, and the soil is preserved in a moist condition, and a good heat is given so as to keep the young plants in a growing state as long as possible, but giving a short rest by diminishing the supply of water in November, December, and January. In February, they are again placed in a hot-bed, and forwarded in a brisk heat with plenty of moisture; and when they have made a growth, which they will do by June, we pot them off singly in pots about four times the diameter of the bulbs, and so that the bulbs are buried to the neck. They are again returned to the hot-bed, giving water abundantly and atmospheric moisture,

keeping them well supplied with moisture up to October, when the supply is diminished ; but, so long as there is foliage, give enough water to keep it from flagging. The pots are top-dressed in January, removing the soil down to the roots ; and it is replaced with rich, rather strong loam from rotted turfs. Do not disturb the roots or interfere with the ball ; but, if the drainage be defective, rectify it. Plunge the pots in a hot-bed ; encourage growth with water as required, and atmospheric moisture ; and in May shift the plants into a larger size of pot, not disturbing the roots or ball beyond removing the crocks and any soil not adhering to the roots. Return the plants to the hot-bed, and keep them growing as long as they appear disposed to do so, giving a good supply of water ; and, when growth ceases, remove them from the hot-bed by degrees, and set them on a shelf in the full sun in the stove, giving water so as to prevent the leaves flagging ; diminishing it, however, when these show signs of going off, and keep the soil rather dry during the winter. These plants, by the third year, will have strong bulbs for flowering ; and the treatment is then the same as for old plants. If inconvenient to sow the seed when ripe, it may be kept in a dry place, and sown early in February. We have kept it in silver sand in a flower-pot in a stove until February ; and we cannot say which is the better plan : both proved good. — *English Journal of Horticulture.*

LILIUM AURATUM. — Some fine examples of *Lilium auratum* have been bloomed this year. At Melchet Court, Mr. Cross had one bulb with three stems about eight feet six inches in height, which bore respectively eighty-one, thirty-four, and twenty-eight flower-buds ; besides four small offset-stems, bearing eight flowers ; making a total of a hundred and fifty-one. In the gardens at Quarry Bank, Allerton, another had five stout stems from seven feet six inches to eight feet high, three having seventeen flowers each, and the other two fifteen each ; also nine smaller stems from three feet to four feet in height, bearing amongst them nineteen flowers ; making a hundred flowers. Mr. Tanton of Epsom had one with seven stems, on which was an aggregate of fifty-two flowers ; while another later spike had forty-nine well-swelled buds. Mr. Tanton grows his plants in good peat, and does not shake them out when dormant ; but they are allowed to start again in the same pot, and are shifted onwards in the same compost. Much of the failure that sometimes takes place in the cultivation of this beautiful lily must be attributed to the division and shaking-out of the bulbs, — operations which not only bruise, but actually sometimes break away, the outside ripe scales, each of which forms in itself a reservoir of nutriment for future growth and support. — *Florist.*

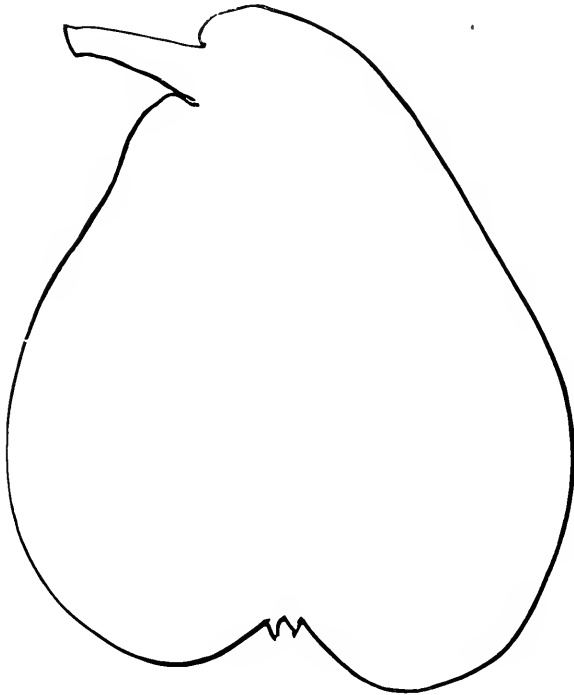
CYANOPHYLLUM. — This plant requires to be grown in a stove, in a strong moist heat, and with just shading enough to prevent scorching. It requires liberal potting when young, and to have a free open compost of rough peat and sand, to which a little mellow loam may be added in the later stages. It was introduced some years since from Tropical America.

MADAME TREYVE PEAR. — One of the most beautiful, perhaps the most beautiful and finest summer pear we have seen, is a variety sent us by Mr. Rivers, and of which we furnish our readers with a figure in our present number. As will be seen by the figure, it is of good size ; but it requires the painter's pencil to give any idea of the color, which, on the side exposed to the sun, is of a brilliant vermilion crimson, — more brilliant even than Forelle, which is one of the highest-colored of pears. On the shaded side, Madame Treyve is of a pale



straw-yellow ; but on that next the sun, and extending over three parts of the surface of the fruit, it is as we have already described it, and dotted with minute yellow dots. The eye is very small and open, and set in a narrow, round basin ; the stalk slender, half an inch to three-quarters long, set in a round, narrow cavity ; flesh white, like that of Forelle, melting like a peach, very juicy, rich, and sugary, with a delicate and highly-refined aroma. A most delicious pear, ripe in the beginning of September. — *English Journal of Horticulture.*

DOYENNÉ DU COMICE PEAR.— This is one of the newer French pears, and is one of first-class excellence ; coming into use in the months of October and November. The fruit is large and obovate, with a smooth skin, and, when ripe, of a yellowish-green color, with here and there irregular patches of russet on the sunny side, which is also frequently flushed with red. The eye is small, and set in an even basin ; and the stalk is short and thick, inserted obliquely. The flesh is white, very juicy, fine-grained, and perfectly melting, with a deli-



cious and peculiar aroma. It is, doubtless, one of the finest pears of its season, and is eminently deserving of extensive cultivation. In size it is equal to a Duchesse d'Angoulême ; but, in regard to flavor, it is much superior to that variety, and more like Marie Louise or Glou Morceau. It keeps longer fit for use than most varieties : a point of no small importance ; for, in the case of many good pears, there is only a very short season during which they can be called eatable. The tree is hardy and a good bearer ; succeeding well on the quince, either as a pyramid or standard. — *B.*

LILIUM AURATUM. — It is not safe to leave the bulbs of this lily in the open ground unprotected during the winter. It may survive ; but the chances are against it. Cover the bed with a frame, and fill in with leaves.

PETUNIAS, DOUBLE AND SINGLE VARIETIES. — *Remarks on the Culture.* — Petunias may be considered as one of the indispensable class of plants for the flower-garden, especially the single varieties, and the double for decorating the greenhouse or conservatory during the summer and autumn months. Of the former, as well as the latter, there are now a great number of sorts in cultivation, and some of them are very beautifully striped; but of that strain very few are adapted for planting in beds or borders, because their growth in those situations becomes very straggling. But cultivated in pots, and trained to a trellis, they have, owing to their fanciful stripes and colors, a very picturesque effect: certainly there are some very good rich-colored selfs, too, in this class, that may be used for the same purposes. But those which are most suitable for the flower-garden are generally more compact in their habit, and bloom in greater profusion. Perhaps one of the best examples of the kind we have now in culture is the Countess of Ellesmere, — a charming rose-colored flower, with a white throat. It withstands the weather exceedingly well; and, the longer it is growing, the more does the continuous succession of blooms increase. It is admirably adapted for a wire basket. We have a basket suspended in which the plant has been grown for these two years past, with other things of minor growth; and its shoots trail in every direction, and continue to flower in abundance, and have so from the middle of May. There are other sorts that are similar in style of growth and blooming-qualities, — such as William's Purple Border and Shrub Rose; and for whites, Alba Magna. The majority of the self-colored single varieties can be produced true to their strain from seeds. But then it requires that the seed should be saved with care, — that is, the plant from which you gather it should be grown in a spot by itself, — as, should there be two or more varieties intermixed, the chances are that they will hybridize each other, and thus the seed will yield a totally different variety from the parent. It may be superior to the latter, or inferior: so, in the event of your being under the necessity of grouping your various sorts together, it would be better to preserve the variety by propagating them from cuttings. I have always had the seed which has been purchased of a respectable seedsman produce the plants correct to name.

It should be sown in large garden pans or pots well drained about the middle of September, and allowed to remain in the seed-pan till early in the ensuing spring, when they may be pricked out, several in a pot, and subjected to a little warmth to encourage their growth; and, when sufficiently strong enough, they can be potted singly or otherwise, as it may best suit the cultivator. As they grow, the shoots should be occasionally stopped, in order to obtain a bushy growth. It does not matter how cool the temperature is to which they are subjected during the winter months, so long as you guard against damp and frost. Some sow in the spring; but I have always had the strongest from the autumn-sown plants.

We shall now offer some observations on the double varieties; for, in their list, they include some really charming flowers, and many of them impart a fragrance which makes them the more desirable. They are propagated from cuttings: and the spring is the best time for that purpose; for, if an old plant is put

in a moist heat, it will quickly push forth young shoots, which strike freely under glass, the pots being plunged into any kind of bottom-heat. As they commence to grow, after being potted, they will soon assume a loose growth if not checked by frequent dropping of the shoots. They should not be allowed to make more than three or four joints before you pinch off their tops; and if you are desirous of having large plants, then shift them into pots a size larger as fast as their pots become filled with roots, and train them accordingly. They require to be potted rather firmly in a rich, loamy soil, and afforded plenty of light and air, as weather may permit. As the shoots are very brittle, they must be staked, or otherwise fastened, to prevent them snapping as they grow. My esteemed friend Mr. J. Burly of the Albert Nursery, Pembridge Place, Bayswater, who cultivates large quantities of exotic specimens, as well as other kinds of plants, for furnishing the conservatories of the nobility and gentry on festival occasions, informs me that he finds the double petunia as a flowering-plant very useful during the summer and autumn months; and that, by shortening those shoots that have produced flower, he is thus enabled to maintain a succession of blooms throughout their flowering-season. As their individual flowers are very large, they are excellent to cut from for decorating *épergnes* and other table ornaments; and they retain their freshness much longer than many other flowers that are employed for that purpose: and as their colors are various, including pure white, magenta, crimson, and purple, with their many shades and blotches, this makes their flowers the more desirable for the above purpose.

We must now say something respecting the means to be used so that you may preserve your stock of old plants throughout the winter months, either for growing them into large specimens in the following year, or for supplying cuttings for a renewed stock. My method is to place them all together in a warm but dry part of the greenhouse; not cutting back any of their wood, except such shoots as may appear unsightly, only giving them sufficient water to keep them in health. In the spring, the shoots are pruned down to three or more eyes in length. Many of the sorts will have previously begun to push forth a number of shoots from the lower portion of their stem; and to the growth of these every encouragement should be given. The plants may then be repotted by reducing the earth around their roots, and replacing them into pots as small as will conveniently admit the roots, and afterwards to be reshifted into larger pots as before advised. The following list contains a few of the best, both as regards size of flower and color:—

NAME.	COLOR.
Snowball	Pure white and green bloom.
Inimitable flore pleno	White and purple blotched.
Madame Rendattiers	Crimson white blotched.
Cinderella	Silvery bluish shaded with blue.
William Bull	Pink spotted with white.
Albert Victor	Double crimson, neat habit.

John F. McElroy, in Country Life.

COMPOST FOR FUCHSIAS AND PELARGONIUMS. — A compost of two-thirds loam from rotted turfs, and one-third old cow-dung and leaf-mould in equal quantities, with a free admixture of sharp sand, will grow them well. Plants in small pots should be potted as soon as they reach the sides of the pots, and before they become closely matted. The pelargoniums should be repotted up to December, and then shifted into their blooming-pots if for an early bloom; but, if intended for flowering in June, the final shift may be given in February. The shoots should be stopped and tied out, so as to produce good specimens. The fuchsias should be potted and kept slowly growing over the winter, and be stopped frequently as required to secure good habit.

Select Fuchsias. — Queen of Whites, Diadem, Laurient, Palmaerts, Hercules, Sunshine, War-Eagle, Elegantissima, Rose of Denmark, Enoch Arden, Banks's Beauty, Catharine Parr, Conquest, and Blanchette.

Select Pelargoniums: Show Varieties. — Belle of the Ball, Charles Turner, William Hoyle, Selina, Mary Hoyle, Elegans, Lady of Quality, Marian, Lord Canning, Conqueror, Beauty of Reading, and Golden Hue *Fancy*. — Clytie, Eleanor, Silver Mantle, Undine, Lady Towers, Eulalie, Godfrey Turner, Roi des Fantaisies, the Rover, Mrs. Turner, First Favorite, and Delicatum. *French and English Spotted.* — Calypso, Egare, Gustave Malet, Rubens, Margaret, Madame Charles Keteleer, Victorine Pinguard, Numa, Général Fleury, Céline Malet, Duchesse de Morny, and Bérénice. — *Cottage Gardener.*

ALLAMANDA WARDLEANA. — This newly-imported plant from Guiana, which, from its growth and aspect, is supposed to be *A. Hendersonii*, is in reality totally distinct from that variety, and so much superior to that or to any other member of this beautiful family, that I think it deserves the name that has been applied to it, and which will prevent it from being confused with *A. Hendersonii*. It is a true evergreen, and will not only bear its leaves through the winter, but can be had to flower at Christmas. Its leaves are produced in whorls of from four to eight, and are short, thick, leathery glaucous, inclining to a reddish brown on the margin. These leaves never die off. The plant refuses to break from the nude wood. It will set flower immediately upon being excited, even in mid-winter; and in no case will it make two joints without flower. This is even the case with young plants a few inches high, and cuttings in the cutting-pot. The flowers are produced in corymbs, with frequently twenty to thirty expanded at one time; and from these corymbs rises a growth which at the second joint again sets flower, and continues thus the whole year round. The flowers are a deep golden-yellow, often measuring ten or twelve inches across (?), with a richly striped throat, which midway is inflated and ornamented with chocolate and maroon stripes; and the back of the sepals is heavily margined with brown. The buds are of a beautiful brownish maroon color before expansion; and the whole plant, instead of being a trailer (?) or climber, as the other members of this family are, is a rigid, upright grower, and must be trained similar to an erica or other hardwooded plant. Such a plant as this proves to be is indeed a gem: it will become the finest exhibition-plant of the day, and be invaluable for the decoration of the dinner-table. — *William Wardle, in Gardener's Magazine.*

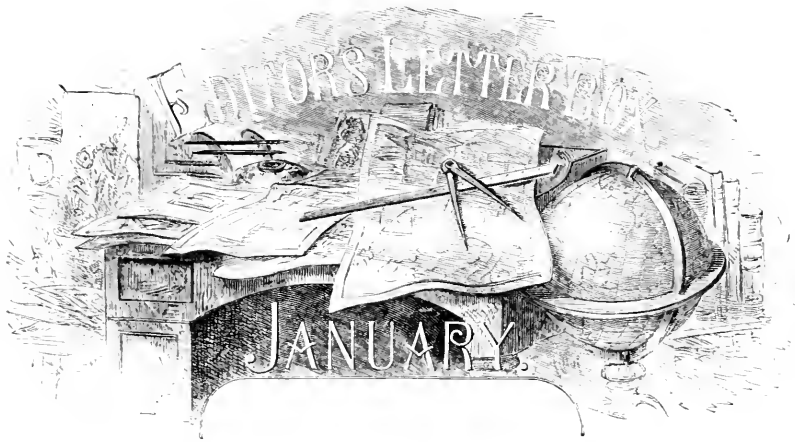
THE CANNAS, which were introduced to our summer flower-gardens for the sake of their foliage, are now asserting their claims to be admitted also as flowering-plants. Though bright-colored and of very singular structure, their blossoms, bearing a very small proportion to the mass of foliage, were formerly chiefly interesting as objects of botanical curiosity. Now the size of their flowers has been so much increased, and the plants have been rendered so remarkably free-flowering, by those innovators who are said to do their best to upset botanical distinctions, — those progressive-development men, the industrious cultivators, who turn selection to good account by improving the beauty of our ornamental plants, and enhancing the good qualities of our useful ones, — that they have become really attractive as floral objects ; some of them being indeed almost as gay as the gladioli, and much more prolific and continuous in regard to their yield of blossoms.

Two of these are particularly deserving of this prominent mention and recommendation ; namely, those called *C. Bihorelli* and *C. grandiflora floribunda*. These are both dwarfish sorts, scarcely exceeding three feet in height. The first named is a dark-leaved variety, the leaves being of moderate size, and the flower-stems branched freely so as to give a very floriferous habit ; while the flowers themselves are broad-petaled, nearly twice the ordinary size, and of a bright, showy red color. The other variety mentioned above is of similar size and habit, but has green leaves and bright orange-colored flowers. These two may be regarded as admirable flower-garden plants, altogether independent of the sub-tropical movement ; and they are sufficiently alike in habit to be used in similar situations.

A somewhat taller variety, named *Canna Rendatleri*, is equally worthy of commendation on account of the profusion and size of its distinctly-colored blossoms. It has leaves of the narrow, elongate form met with in some of these Indian-shots ; while the flowers are of large size, and of a coppery yellow or orange tint, which renders them very distinct-looking and effective.

We may further approvingly mention two of the taller kinds, which attain some eight feet in height. One of these, *C. Van Houttie*, is a dark-colored, narrow-leaved sort, which produces its very fine red flowers freely enough to put on quite an attractive appearance. The other, called *C. Promise de Nice*, is remarkable for its broad-petaled clear yellow flowers. The individual blossoms of these several varieties are wonderful advances on the older kinds, such as *indica*, which used to be met with in plant-stoves ; but the palm is borne off by *Canna Bihorelli* and *C. grandiflora floribunda*, which, presuming the situation and season to be at all favorable to plants of this character, are worth a place in any summer-garden of flowers. — *Gardner's Chronicle*.

DESTROYING WORMS IN POTS. — The worms in the pots may be destroyed by stopping up the boles in the pots with corks, and watering with lime-water until it stands on the surface. The lime-water may remain for an hour ; then, on removing the cork, it will pass off. The lime-water may be made by pouring thirty gallons of water over ten pounds of fresh lime. Stir well up, and allow the whole to stand two or three days ; then employ the clear liquor.



THE Editors of "Tilton's Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

A. M. C., Philadelphia, Penn. — *Propagating Echeveria metallica*. — It may be propagated by eyes, or a leaf taken off with a kind of heel as you describe. These, inserted in sandy soil in spring, and plunged in a hot-bed, will soon root if covered with a glass and kept moist and shaded. No doubt, the best of all modes of propagation is by seed; but this is not very plentiful: therefore we should prefer propagation by eyes, or division of the plant. The latter is a

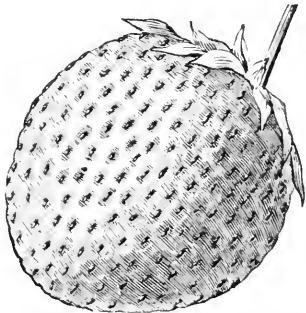
safe mode of increase, but can only be practised with large plants. You may grow it well in a compost of equal parts of turfy light loam and sandy peat, and a third part of charcoal in pieces from the size of a pea up to that of a hazel-nut, with pieces of grit or sandstone of like size (or crocks will do), and silver sand, the whole well mixed. Let the drainage be good. Manure is of no advantage; though a little old dry cow-dung will give increased vigor.

M. P., Concord, Mass. — You will probably get fruit from the hornet-raspberry canes next year; but our experience with the variety has not been such as to lead us to recommend it. From hundreds of plants we get but little fruit. Many thanks for the seeds of fringed gentians sent.

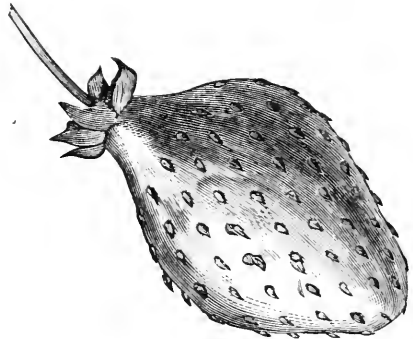
INQUIRER, Boston. — The European strawberry called "President Wilder," in honor of Mr. Wilder's visit to Europe in 1867, is of Continental origin, and is very different from and much inferior to the berry which we advertise as President Wilder.

The American variety is a seedling raised by Mr. Wilder, and named for him by the Massachusetts Horticultural Society.

In order that our readers may see the difference between the two berries, we subjoin wood-cuts of both. The superiority of the American seedling is very evident.



THE PRESIDENT WILDER (American).



THE PRESIDENT WILDER (European).

J. C., Havana, Ill. — Grow the laurustinus in a greenhouse, in good soil, with good drainage, and place it out of doors in the pot in summer. There is no difficulty in its cultivation.

The justicias are all properly stove-plants, and, if grown in a greenhouse, need the warmest part. Propagate by cuttings. Soil, — rich loam and leaf-mould. Pinch in the plants freely to keep them in shape.

The habrothamnus is a greenhouse-shrub. To be seen to advantage, it should be planted out in the border, and trained to a pillar. If well grown, it blooms all the year. Soil, — loam and peat. Easily increased by cuttings.

The mahernias are greenhouse-shrubs. Raise them from cuttings, and grow in a soil of loam, peat, leaf-mould, and sand, with good drainage.

WE have frequently been asked how to force *Dielytra* (*Dicentra*) *spectabilis*. The following article from "Country Life" is just to the point:—

"This most beautiful plant was found in Northern China by Mr. Fortune, and sent by him to the London Horticultural Society in the year 1846. Since that period, it has, no doubt, been largely distributed throughout the country. Of late years, however, this and many other (at one time much-thought-of) plants have been in a measure discarded, to make way for more costly and fashionable subjects. The *Dielytra spectabilis*, like most other fleshy-rooted plants, is easily excited into growth. At almost all seasons, consequently, very gentle forcing is necessary to have it in bloom at a time when the humblest plant in flower is made welcome.

"To have dielytra, then, in bloom at the new year, or soon after, the following is the simple plan we adopt to attain that object: About the latter end of October, or soon in November, a large root or two are dug up from a shady border in the kitchen-garden, where they have been turned out in the past spring after the blooming period was over. The roots are divided, and potted into 32 or 24 sized pots, using leaf-mould and sandy loam in equal parts. A rich compost is to be avoided at this stage of its cultivation, as it has a tendency to make the plants produce an over-abundance of foliage, and not a corresponding amount of bloom. If large specimens are required, a richer mixture would be necessary when the plants receive their last shift than might be required in the case of smaller plants. I prefer a dozen or two of small plants with plenty of bloom, before a huge specimen or two with a dense mass of foliage and a few spindly flower-spikes. After the potting and watering of the roots have been completed, they are placed in a cool pit or frame, where they will readily commence to make fresh rootlets. When the pots become well filled with roots, they may be shifted to new pots a size or two sizes larger. Where small plants only are required, they may be potted in the same sized pots again, adding a little fresh mould at the operation. When there is danger of much frost setting in, they should be moved to a vinery or peach-house that is likely to be started early in December, bringing the plants nearer the light and warmest part of the house as they advance in growth. Attention to sticking and tying out, supplying the plants with weak liquid manure-water once or twice a week when they are showing bloom, are all that is required to insure the successful pot-culture of this highly-ornamental flower." — *H. C.*

J. C., Havana, Ill. — What is the proper treatment for cinerarias? — Sow the seed in spring. As soon as large enough to handle, prick out in pans or boxes; and, when larger, transplant into small pots: keep repotting, carefully picking off all buds until the plants are large enough. Give perfect drainage, plenty of light and air, and smoke often to keep down the green-fly. Soil, — loam, well-rotted manure, and peat, in equal parts, with sharp sand to keep the soil open. Old varieties are increased by cuttings of side-shoots.

T. S., Garrisons. — Thanks for your suggestions. It is difficult to obtain such communications as you commend. We are not blind to their value; but, for one real practical article, we receive dozens of theoretical communications.

THE following letter from Mr. Bresee gives a few facts, for which there has been much inquiry, as to his seedling-potato:—

HORTONVILLE, VT., NOV. 18, 1868.

MR. EDITOR, — You ask if I have ever sold any No. 4. or if the ones now reported to be sold were stolen. I have within a few weeks sold twelve or fifteen tubers of No. 4; none before. Have seen no sales reported of those sold by me. Mr. Roach has sold three tubers. I think, for the following prices: One tuber for \$40, one for \$50, and one for \$60. Mr. Parsons bought of Mr. Linsley eight tubers for \$400. The other sales of No. 4 I know nothing about. Bresee's Prolific and P. E. R. have been sold for No. 4; some of them as high as \$50 for a tuber.

Two years ago this fall, I gave a friend who was moving West a few tubers of No. 4. He wrote me this fall that his had frozen; that he had lost them. Before he left town, he gave one to Mr. Manchester, of whom I bought a bushel and twenty-five pounds, for which I paid him \$200 per bushel. I left him only two or three pounds. I bought them a few days before I was at Boston last spring. I gave two tubers away, — one to my brother, and one to another man. Mr. Manchester gave Mr. Roach one. Mr. Linsley grew a hill or two. That comprises about what there is in Vermont. Two men in Western New York have a few. That is all I know of No. 4. There is any amount of spurious potatoes offered for No. 4, and some are sold for No. 4 and at a high price.

Respectfully yours,

ALBERT BRESEE.

P. S. — No. 2 or Bresee's Prolific has been sold for \$250 per peck.

FLORIST, Buffalo, N.Y. — The cannas are much grown as ornamental-foliaged plants, and are fast coming into favor for their flowers. The last number of "The Florist" contains the following note:—

"Some of the modern improved varieties of cannas are well adapted for flower-garden decoration, owing to the size and profusion of their flowers and their continuous-blooming properties. *C. Bihorelli* and *C. grandiflora floribunda* are particularly deserving of this recommendation. They are both dwarfish sorts, scarcely exceeding three feet in height. The first named is a dark-leaved variety of moderate size, very floriferous, the flowers broad-petaled, nearly twice the ordinary size, and of a bright showy red color. The other is of similar habit, but has green leaves and bright orange-colored flowers. Both are admirable flower-garden plants."

E. A. L., Williamsville, N.Y. — Greenhouses are fumigated with tobacco-smoke to free the plants from green-fly, and the operation is performed as often as the aphid becomes troublesome. The smoke may be kept in from thirty minutes to several hours, according to the state of the plants. Many tender-leaved plants are injured by tobacco-smoke; but common greenhouse-plants are not affected injuriously.

If your lettuce is in a very tender state, the smoke may injure it; but, ordinarily, no harm could be done.

There is nothing so good or so cheap as tobacco for fumigation.

MR. EDITOR, — Your pleasant and interesting correspondent Francis Parkman wishes information and experience concerning the cultivation of the *Lilium auratum*. It is not difficult to grow in many soils, but is easily injured by hot suns.

I have seen it growing and blooming on the rich vegetable prairie soil of Kansas. The soil best adapted for its successful growth is a deep, well-pulverized, well-drained soil of vegetable mould and sand. It does not bear extreme: of damp or heat well. To prevent the sun from injuring it, plant a screen of cypress (*Ipomoea Quamoclit*) vine on its south side in such a way as to protect it from the direct rays of the noonday sun. The foliage of this beautiful vine will furnish a rich, harmonious background for the lily, at the same time giving it the needful protection. Do not disturb its roots in the least by cultivation. Keep the ground moist, but not too damp. Crude manures are not acceptable to it, but on the other hand repulsive, and frequently obnoxious. It has not strong assimilating power, and requires its food well prepared for absorption and digestion. Give it proper health conditions, and it will richly repay the care and trouble bestowed upon it.

Thos. W. Organ.

"EDEN HOME," CABLE, O.

MR. EDITOR, — In my father's door-yard, a branch of a common snowball-tree had become entangled in the grass, and, creeping along the ground, had taken root at its tip.

About eighteen months ago, I layered some branches of *Magnolia purpurea*. To-day I examined one of these, and found no roots, save at the free end of the branch. Here was a finely-rooted little plant. Until I found these plants to day, I had not known that any woody plants propagated in this manner, except the bow-cane raspberries, the dewberry, and Wilson's Early Blackberry.

If these facts are of any use to you or your readers, you are welcome to them.

D. M.

HAMILTON, O.

MR. EDITOR, — Your correspondent A. J. Caywood, in the December number of the Journal, speaking of the saccharine test at Hammonsport, N.Y., Oct. 20, says, "Next morning, the same parties tested seventeen ounces of the same Iona. The Walter beat it by eight degrees." What happened the *next* morning, I do not know; but the committee appointed to make the test report Delaware 103, Iona 101, and Walter 99. I do not know that Mr. Caywood intended to make a false statement: but one would naturally infer that the *committee* made the "Walter" beat the Iona; which was not the case.

S. Willis.

BOSTON, Dec. 7, 1868.

[We have investigated the above, and find our correspondent "S. Willis" is correct. The committee appointed to make the test know nothing of the "Walter's" next-morning test. Dr. Grant will also reply to Mr. Caywood's article in our February number; the early day at which the January number went to press preventing an earlier publication of his article. — *Eds.*]

J. C., Havana, Ill. — We take from an English exchange the following directions, which fully answer your question : —

“ *Culture of Hoya carnosa.* — This plant is very accommodating : it will succeed in a stove, vinery, or greenhouse, but best in a warm greenhouse or cool stove. From October until April, the plant should be kept dry at the roots, receiving no water except when necessary to keep the leaves from flagging, which they must not be allowed to do. The best time to repot is when the plant begins to grow. Drain the pot well one-third its depth, and employ a compost of sandy loam from turf, cut about an inch thick, two-thirds, and one-third equal parts of fibrous peat, pieces of charcoal, and grit or crocks, from the size of a pea up to that of a hazel-nut, with a free admixture of silver sand. Water sparingly for a time, but maintain a moist atmosphere ; and, when the plant is growing freely, give liberal supplies of water, but avoid saturating the soil. A light and airy situation is necessary. You may take off a shoot in spring, cut it below a joint, trim off two or three of the lowest leaves, and insert it in a pot well drained, and filled with open sandy soil. It will root in a few weeks if kept moist and in a gentle heat.”

IDEM. — How to grow hoyas. — The hoya, or wax-plant, is of very easy culture ; the common species, *H. carnosa*, doing well in a greenhouse, or even in a parlor. The soil should be peat, loam, and sand.

For culture of *Hoya bella*, which is the most elegant species, see “ American Journal of Horticulture,” vol. ii. p. 114.



AUTUMN-TREATMENT OF ORCHARDS.

THERE is no season when our orchard-trees are so little cared for as during the months of August and September; and yet that is the most critical period of the year as regards the health of the tree, and the crop of fruit of the succeeding year.

Gathering the maturing crop (often with careless violence to the tree) so absorbs the attention, that care for the future is forgotten.

The double duty with annual bearers, — of maturing one crop, and preparing for another at the same time, — and the vicissitudes of the season of drought, often so exhaust the vitality of the tree as not only to damage or destroy the succeeding crop, but to endanger the life of the tree when not protected.

At the West, where excessive drought is the rule rather than the exception during this season, is the statement particularly applicable.

The formation and proper growth of the fruit-buds on which the succeeding crop depends can only be effected where the tree is well nourished and in a healthy and growing state. A full supply of nutriment and moisture is indispensable.

The reason that summer-pruning induces fruitfulness *is* that it lessens the means of exhaustion, and thereby invigorates the remaining branches at the season when the germs of the future crop are forming.

Nor is the injury to the crop the only evil from neglect or other causes resulting in defective nutrition. It is doubtless the last and closing act of the season to deposit in the tissues of the tree nutriment for the early growth of the leaves and fruit-buds. As the leaves are the elaborating organs, there can be no nutriment elaborated till they are formed: hence the necessity for such deposit.

The grain of wheat or corn contains nutriment for the expanding germ, and sustains it till the organs of nutrition are produced.

The grape or currant cutting furnishes food to sustain its growth until the rootlets are formed; and such is the universal law or requirement of Nature as applied to both vegetable and animal growth.

The cultivator should see that the requirements of Nature are met, and that no untoward influence interferes to thwart her designs at that critical period.

If the soil ceases to furnish the necessary food for the tree, or if excessive drought exhausts the moisture, rendering the soil so dry and compacted as to check the growth prematurely before the fruit-germs are developed, there can be no blossoms; or the blossoms will prove abortions, and the fruit will fall prematurely, or be scabby and defective; or, in extreme cases, the starved tree will, in its efforts to perform its functions, exhaust itself; the bark will die, and loosen at the collar or base of the limbs, producing permanent injury or death.

An occasional season occurs when cuttings unaccountably fail to grow, although the spring season seems favorable. The cause is evidently starvation by excessive drought or other cause the previous autumn.

If the young shoots taken for cuttings are deprived of generous nourishment at the close of the growing season, they will not contain the necessary material to develop a perfect plant; the buds will burst, and make a feeble growth: but the elements of growth are exhausted before roots are formed; and the cutting dies from exhaustion, as the nursery-man observes to his sorrow. The cause and effect are the same in the fruit-bud and the cutting.

Careful and generous cultivation or mulching, so as to secure a regular and constant growth through the entire season, is evidently the proper remedy.

There may be danger of *too high* cultivation late in the season, producing a succulent growth that may be injured by the cold of winter ; but experience, I think, will show that there is less danger in this direction than the opposite.

The fruit-buds of the peach and other delicate fruits, which are easily excited, are frequently prematurely developed by warm and wet weather in the fall, and, when so developed, are sure to be killed by the first severe cold ; but such development never occurs except after a season of rest.

If the growth is regular and constant through the entire season, there is no danger ; but if, after the fruit-buds are formed, severe drought occurs, so that the growth ceases and the leaves mostly fall, and subsequently the buds are stimulated by very warm and wet weather, they will swell, and the injury follows of course.

My conclusions are, that to preserve the health and vigor of our fruit-trees, and insure a regular production of fruit, requires the most careful treatment during the last of summer and early autumn, counteracting the effect of extreme drought or extreme wet, and effecting a uniform, constant, and healthy growth, till the gradually-advancing cold strips them of their foliage, and consigns them to their annual rest in a normal state.

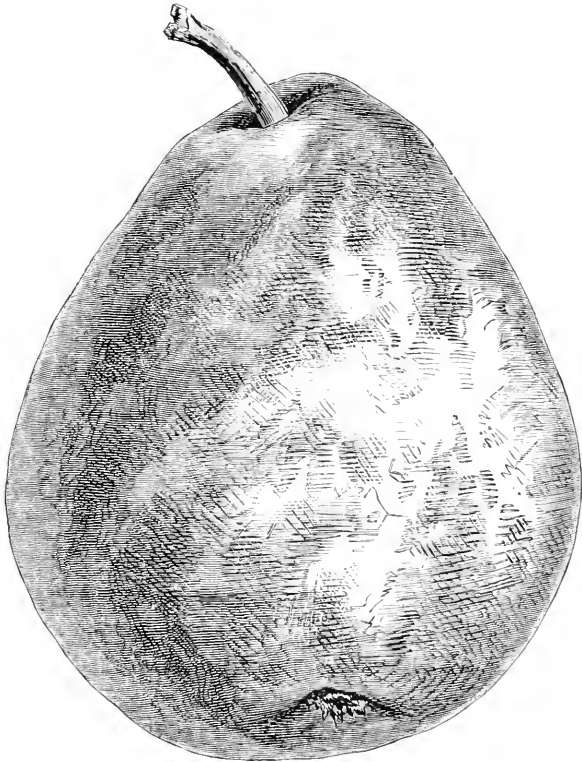
An excessive growth is never healthful, but is particularly injurious at the close of the season. The growth should be gradually checked, but only by Nature's proper agent,—the cold winds of approaching winter, the lullaby that puts them to sleep.

Elmer Baldwin.

CONSEILLER DE LA COUR.

THIS is not a new pear ; having been raised by Dr. Van Mons. It is also known in the Belgian collections as Maréchal de la Cour and Duc d'Orléans. It has constantly been increasing in favor ; which induces us to reproduce it at this time.

Description.— Form obovate, sometimes obtuse, pyriform ; size quite large ; stems short, stout, generally inserted on an angle ; calyx very small, segments frequently abortive ; basin small, narrow ; color dark green, becoming dull yellow at maturity, coarsely dotted and occasionally veiled with a thin coating of russet ; flesh yellowish-white, melting, juicy, buttery, rather



coarse, and a little granulous at the core ; flavor spirited, vinous, with a rich, nut-like aroma, and slight astringency near the skin ; season November to December ; quality very good, highly esteemed by those who like an acidulous pear ; tree hardy, of fine form and habit, foliage and fruit persistent, very prolific and vigorous, making a tree of the largest class.

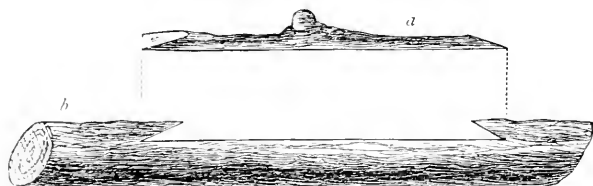
Marshall P. Wilder.

GRAFTING THE VINE.

YOUR correspondent Mr. Samuel Miller gives the true season for grafting the vine successfully. We have tried grafting the vine at various seasons of the year, but never succeeded except during its period of growth; and this is the necessary state or condition plants should be in to be successfully operated on. It should be remembered, however, that there is always something more wanted than a mere description of a mechanical operation. For instance, we may tell your readers that cuttings of fuchsias should be made two inches long, put in sand, and bottom-heat applied; which will insure their rooting with ordinary care. But watch the novice and the man of experience at this simple operation. The former will take any piece of wood that comes first to his knife, and most likely that which is perfectly hard, but succeeds in striking some of them in the course of perhaps four or five weeks' time; while the latter, finding his plants in a hard, ripened condition, will lightly cut back the points of the shoots, place them in good strong heat, and take off the cuttings in quite a *soft, safty* condition of two joints, and root them in about eight days, and not miss the rooting of one cutting in a thousand. Here, then, lies the difference between a mere mechanical operation and that of a necessary experience of the *condition* of things to a successful act of the mechanical. We say, the vine can be as successfully grafted as a willow can be rooted; but the vine must be in a *growing* state. The first leaves should be fully developed before attempting the operation. This becomes requisite from the fact that the vine will not bleed in this state: the crude sap with its great force has passed up through the plant-tissue, changed its condition chemically through the agency of the leaves, and, in the act of returning over the wood, is in a more glutinous condition for the union of the scion to its fitted parts; and thus the alburnum of both scion and stock unite instantly. There is no uniting of the duramen, or hard wood, as many suppose, but a formation of wood *over* wood. Now, it will be seen, from what has been said, that the union that is effected lies in the fact of the immediate uniting of the alburnum of the two different parts which come in contact under the proper con-

ditions. But suppose, now, that we have a vine growing in the open air whose leaves are just fully developed, and that we secured grafts during winter of a desired sort to work on this vine : we should, most probably, after cutting off the grafts, put them away in some place where heat would not start the buds, in order that the sap in these grafts should lie dormant ; and, when the vine had arrived at the state of growth spoken of, we should take these dormant scions, and work them on the stock. Now, we ask you, reader, do you think that such scions, or grafts, would be in an exact condition with the vine-stock ? Your reason, now the incongruity is spoken of, tells you no : for you can see at once that these grafts would have to remain (when grafted on the stock) some time before the hard glutinous matter would be dissolved sufficiently to be in the exact condition of the same matter which is returning over the wood of the vine-stock ; and, after waiting long enough to allow heat to so liquidize this glutinous matter of the scion, both fluids would then unite, and growth would be effected. This is the reason why scions take so long to start into growth. Now, to obviate this, we bring the scions into the same temperature as the stocks are growing in, some eight or ten days previous to their being worked : by this means we get the sap, as it is called, in the scion, in a nearer approach to the condition of the sap of the vine-stock ; and the result has been, with us, seldom a failure. The same law applies to the exotic vine as to those in the open air ; and so easily is the grafting effected, that we have taken vines that were spur-pruned, say of a black variety, and inserted a white variety at every alternate position, producing the singular-looking effect of having one bunch white, and the other black, alternately, on the same vine. In this way we worked what was *called* a new variety, — Muscat Hamburg (black) on White Muscat of Alexandria. Such operation is performed by merely taking a single bud, cutting it *wedge* form, and tying it in where required. This we have often done without even the grafting-wax. Indeed, failure often results from using the latter carelessly, rubbing it in *between* the bark of the scion and the stock. The use of wax is proper if it does nothing *more* than exclude the air. As we graft vines usually under glass, when of a large size, in the ordinary way, by either the saddle, whip, or crown method, there remains generally an unsightly, warty excrescence, which becomes enlarged with the age of the vine, and prevents that free

flow of sap which is so requisite to the health of the plant; and, to avoid this, we have practised a sort of bud-grafting, as shown in the cut (*a*, a bud-graft, or scion, and *b*, the stock). In the preparation of this graft, as much of the wood as possible should be cut out, and as little as possible from the stock: this not only admits the easy bending of the graft by tying down to fit its cut shape in the stock, but, by cutting out the *old* wood, leaves little else than the thin layers of the last year's alburnum, or new wood, to come in contact with each other, as these are the parts that form a true union and growth. The position on the stock where we prefer to insert this graft is just above the angle formed by the vine at the bottom of the rafter, because we get from that point up a new cane, which insures the fruit from the bottom to as high up as we choose to fruit the vine. The



graft should be inserted when the vine is in leaf, and tied down with matting so that the edges of the bark nicely fit each other, so that no grafting-wax can get between the barks. Then place or tie over the bud a handful of moss or cotton-wadding, and keep it moist: this assists the bud to swell. Watch the bud; and, when it is discovered that the bud is swelling, go to the top of the vine, and rub out or off some of its shoots, or spurs, so called, and continue this by degrees as the bud is developing itself. When the bud, or graft, has pushed out an inch or two long, the shoots, or branches, of the parent plant may be dismembered of two-thirds of its branches. This will give still more vigor to the graft; and in a few days it will be seen that the graft is growing freely: then take the knife, and cut away the old vine to within a foot of the graft-growth, and tie in the latter *by degrees*, or it will be broken off to that portion of the old vine which is left for that purpose; and train afterwards straight as a line up under the rafters, and the great work is completed. The matting with which the graft has been tied in should be slackened by degrees as the young shoot grows: it should not be taken off that season, but kept pretty firmly to its position, or the flowing

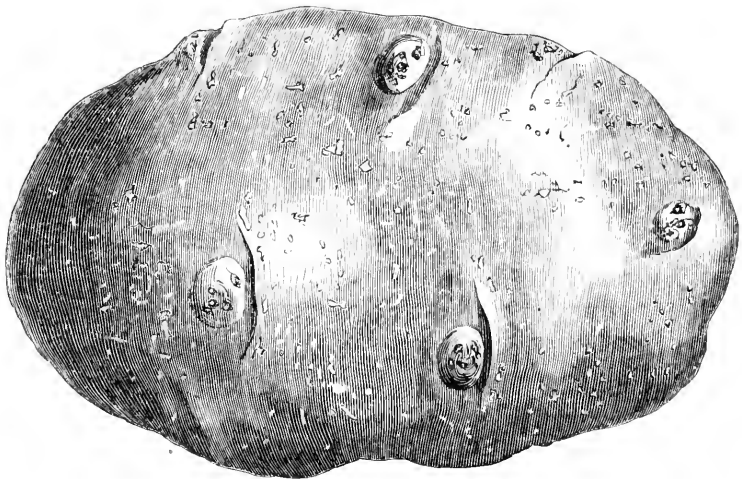
sap of the vine will raise up the bud from its proper position on the stock, forming the same warty excrescence as though grafted by the other methods previously referred to. We would here remark, in the case of out-door vines, it is best, if it be possible, to leave a few green leaves to draw up sap *above* the grafts.

John Ellis.

WHITE PLAINS, N.Y.

WILLARD POTATO.

A SEEDLING from Early Goodrich, raised by Mr. C. W. Gleason of Massachusetts in 1863. In form and size it very closely resembles its parent, while it is equal if not superior to it in productiveness. In color it is of a fine rose-red, covered with numerous dottings of a dull white, with occa-



sional splashings of a yellowish-white. The flesh is white. In earliness it matures just after Early Goodrich, and ranks as medium-early.

Grown side by side with the Early Goodrich this season, I find it to be equally free from rot. I think the vines are rather larger than those of Early Goodrich. In quality, equal to that variety.

I give the above as the result of one season's experience with the Willard, with a crop of about forty bushels.

James F. H. Gregory.

MARBLEHEAD, MASS.

GROWING STRAWBERRY-PLANTS IN POTS.

THE practice of using small pots in which to root new and valuable varieties of strawberries, so as to secure certainty of success in their transportation long distances, and that in the growing-season, is not entirely new, and is generally understood by the more intelligent growers ; though but few, I apprehend, fully realize the value of this method, by which plants may be sent any distance requiring not over two weeks' time, and still be in a flourishing condition.

There is a very general impression, however, as I find from the last few months' experience, that pot-grown plants are connected with hothouse-culture ; as I have had parties write me that they would prefer plants grown in the open air, — as though, forsooth, those grown in pots were not.

It is partly to correct this error, but more particularly to call the attention of cultivators to the manifest advantages of this manner of propagation, — not alone of rare sorts, of which a few hundred only are to be grown, but in setting large plantations for market, — that I am induced to write.

It is conceded, I believe, by the most experienced growers, that if strawberries can be successfully planted out in July or August, so as not to materially check their growth, they are more certain to give satisfaction than if set at any other time.

It is one of the greatest drawbacks in raising this fruit, that the land devoted to it must have one season's cultivation with but little if any return. And if it can be shown that a plat of ground may be stocked with strawberries in August, by the use of pots, in so perfect a manner that the first crop will be as good as the second is in the ordinary way, it may be some inducement to the extensive planter, no less than the amateur-gardener, to give this method a trial.

I first commenced the use of pots in my experimental grounds ; and was led to it from the desire to give to all the varieties on trial, — new seedlings of my own, — and all the more popular sorts, new and old, exactly the same conditions, to the end of determining not alone their relative good qualities, but the absolute value of each.

The result proved so conclusively their utility, and was so entirely satisfactory, that I adopted their use at once in setting plantations for fruit for market, no less than in multiplying the rare sorts to be sent into other States.

Those conversant with greenhouse-culture will need little if any instructions ; while to the ordinary cultivator a few suggestions will probably be necessary to make his first attempt a success.

The best beds for propagating-purposes are those set the preceding season. I find they make much stronger plants than larger hills from which the runners have been cut. A border should be fitted up for this special purpose, and be made so rich and fine that the pots may be filled from between the rows ; and, if possible, should be in the vicinity of the ground to be planted.

The best time for potting is when the second or third plant on the runner is beginning to root ; though it may be done successfully after they have become well established in the ground. They should be loosened carefully with a spade or fork ; the roots shortened with a sharp knife to about three-fourths of an inch, inserted into the soil in the pot, and pressed down.

Some care is needful not to injure the runner, as the new plant is dependent upon that for nutriment until it forms new roots of its own : and it is advisable not to pot more than twenty-five or thirty of the strongest plants to each hill, in order to secure the utmost vigor ; the rest to be removed.

When a hundred or so are potted, they should be wet down thoroughly, adding one quart of the leachings of the manure-tank to each pail of water ; and, if the weather is dry, they will need water once a day until ready to plant.

In about ten days, according to the season and weather, or as soon as the roots have penetrated to the sides and bottom of the pots, they may be turned out, and the pots refilled.

It will take something over twenty-seven hundred pots filled and turned four times to set an acre, at one foot in the row, rows four feet apart.

My experience has, however, demonstrated to my own satisfaction, that there are decided advantages in putting three plants in a hill, — the hills

two feet apart, the rows three to four feet, if horse-cultivation is employed ; and two feet by two and a half if hand-tended alone.

By propagating and setting plants as above in August, and even as late as September, I have frequently gathered an average product of a quart to the hill the following season. Nor is this result confined to one variety alone ; for I have several from which such a crop may be counted on with certainty, under a good and thorough system of cultivation.

The extra work necessary in this process is about the amount required for the potting ; say one day for every thousand plants. The watering will require some time : but where there are hundreds of plants growing in immediate proximity, as in the pots, it is but a small task ; while if transplanted from the ground, and the weather be dry, it will need ten times the amount of labor in watering to save them. The setting is in favor of the potted plants, as they can be turned out of the pots much faster by the use of a wheelbarrow to transport them than they can be well set in the ordinary way.

Altogether, I think that growers of this fruit who take any pride in attaining the highest success, after giving this system a trial, will not wittingly go back to the old method.

B. Hathaway.

LITTLE PRAIRIE RONDE, MICH.

LILIUM AURATUM.

OUR experience has shown, that the less the bulbs of this lily are handled, and the less frequently it is transplanted, the better for the well-being of the plant. The scales are unusually tender, and break off very easily, and every one lost injures the bulb. Plant in a soil of loam, peat, and sand ; and cover the bed in winter with a frame, filling in with dry leaves.

With this protection the plants will winter well, and push strong shoots in spring.

GLEN RIDGE.

SURFACE-DRAINAGE OF ORCHARDS.

THE general practice of tile-draining, so essential in English husbandry, will not obtain to any great extent on the prairies while land is cheap and labor dear. It must work its way slowly, first among the vegetable and small-fruit gardens that surround our cities and villages, and then extend more gradually to the large farms. Then we are becoming so used to labor-saving implements, that we must have a machine by which to cut the ditches for the tile before we shall commence any extended operations of the kind. In the mean time, we must have surface-drainage, so that the roots of trees do not stand in stagnant water.

It is well known, that, when rain-water passes off through the soil, the gases that have been washed down with it by the shower are absorbed by the soil; that is, the soil has a greater affinity for these gases, and they are thus arrested by it. These gases are, at that period, reduced to their original atoms, and ready to be taken up by the roots of the plants, to be assimilated for their structure. On the other hand, if the soil becomes saturated with water which cannot pass off through the soil, and must be evaporated, the gases are evaporated with the water, and the plants are thus robbed of their legitimate food. This proposition is easily established on any of our clay soils, and especially those with retentive subsoils.

In nearly all that part of the State lying between the Big Muddy River and the Terre Haute and Alton Railroad, there is a band of indurated clay, from four to twelve inches thick, lying from one to four feet below the surface,—mostly one to two feet. The soil above and below this is friable and porous; while this band prevents the water passing up or down. For all practical purposes, this acts like any hard-pan subsoil, and can only be overcome by tile-draining or by weathering down its substance. The plan that we propose for the hard-pan subsoil will be available for this also.

Where tile can be had at reasonable rates, it would be advisable to use it on land worth a hundred or more dollars an acre; but, on most of our lands, we must, for the present, depend upon surface-draining. It is of little importance to the owner of cheap lands if the open drains occupy a sixth

or eighth of the land, as it is of much less value than the interest on the outlay for tile-draining.

We may surface-drain all our lands with the use of the plough, without a dollar's extra labor ; and it is a matter of surprise that we have not before attended to so important a matter. There can be no doubt in my own mind that the loss of the fruit-crop this season was, to some extent, due to this neglect, especially in the more southern portions of the State.

There is scarcely a place on our prairies that has not more or less of fall sufficient at least for surface-drainage. If we desire to plant such lands to vegetables or small fruits, we can lay it off into lands of, say, thirty-three feet ; and, by repeated back-furrowing, we shall have a raised seed-bed that will answer nearly all the conditions of tile-draining. We shall lose about an eighth of the surface for planting ; but then we have the remaining seven-eighths comparatively well drained.

In the case of vegetables and small fruits, the ploughings must precede the planting. This mode of preparing the soil deepens it without the expense of trench or subsoil ploughing, and is especially adapted to the autumn work. No water can stand on the beds ; but it sinks into the soft mass ; and, where the hard pan presents itself below, it passes along its surface to the dead furrow, whence it is discharged or is evaporated. Before it reaches the dead furrow, the gases that it held have been retained in the soil for the use of the plants.

A large proportion of our orchards have been planted and cultivated on the flat system. These, at times, suffer from an excess of moisture, which, at the time of setting the fruit, is liable to weaken the vigor of the tree ; and the result is, the fruit drops off while small. To remedy this, the same system of ridging or back-furrowing will apply. It is true that you deepen the soil over the roots near the tree ; but as it lowers the water-level, and gives the outer ends of the roots free access to air and moisture, no injury is done, while the dead furrow acts as a surface-drain.

In my orchard, in some instances, the bottom of these dead-furrow drains is three feet below the surface at the base of the tree ; that is, a foot and a half of soil between the rows has been in the course of six or seven years moved by the plough towards the base of the tree. It can be readily seen that this deepens the bed very materially ; and, as the roots

can run deeply, they are less liable to the accidents of the season from heavy rain-storms or severe drought. The ground being partly shaded by the foliage, evaporation proceeds slowly, keeping pace with capillary attraction ; and the result is a steady growth, little affected by sudden changes of weather.

This mode of culture is also advantageous for the winter : for the soil, being free of stagnant water, cannot injure the roots by ice ; and, as the roots run deeply, they are somewhat in the condition of forest-tree roots covered with leaves, — a mulching of friable earth.

The bluff soils (*Loess*) and sandy soils are not benefited to any great extent ; though some of our quicksands are an exception, or those sands derived from the carboniferous limestones, which are often mixed with finely comminuted clay, and which hold water like a sponge.

The same system of drainage must prove of great value to a large part of the Southern States ; at least, those that I have visited. Nothing short of the most genial climate could save the crops, that stand for weeks with "wet feet" during the rainy season. During all this time, the garden vegetables on the heavy clay lands make slow progress ; which has induced many persons to say that garden vegetables fail to give satisfaction. Now, if such gardens had good drainage, the plants would make wonderful growth during the wet season, as is seen in all soils that are naturally drained. Fruit-trees, especially the apple, are there short-lived ; and no doubt much of it is due to the stagnation of the wet season, just when Nature intended to give them a vigorous start for the trying times that often follow.

On thin soils, resting on sterile hard-pan subsoil, the apple does poorly ; no doubt more from the excess of moisture during certain seasons than from want of a supply of plant-food, which the water locks up for the time being. This has been proved time and again by tile-drains. Our object at this time is to show how a remedy may be applied, that costs no additional muscular and but a small modicum of brain labor. *M. L. Dunlap.*

THEORY AND PRACTICE IN LANDSCAPE-GARDENING.

ON PLANTING. — It appears to be the belief of many professing to be landscape-gardeners, that the reading about the subject, or the accumulating of designs for laying out places, will make them able to do the thing in the right way ; but this is not so, unless combined with great practical experience, which alone enables them to understand the theories of good writers. Besides this, a thorough knowledge of practical gardening is necessary, as also of the trees, shrubs, and plants suitable for use, and their cultivation.

Without a full understanding of the theory, which can only be obtained by long practice, reading, even of the best books, will teach very little ; most of them affording very little practical information.

Without a complete practice, and without the knowledge of trees and shrubs, theory will never be applied in the right way.

Practice alone, without theory, may perhaps better enable a person to work to good advantage, if he follows a sort of *routine* by copying other plans ; but will only succeed where the new field to be laid out offers some analogy with some other, the arrangements of which may be more or less imitated.

A theorist, without the knowledge of the material to be employed, — I mean trees and shrubs, and ignorance of the way to handle them, — will not even be able to imitate others.

Roads, drives, and walks, the laying-out of which must certainly be understood by the landscape-gardener, are not exactly in the line of the art : but their location is certainly so.

You can find plenty of intelligent workmen who comprehend the grading, and who can establish roads and drives by themselves as well as under the guidance of so-called artists.

The staking-out of roads and drives, as aforesaid, requires the practice of the landscape-gardener : but the rules are not exactly positive ; and, if the workman himself cannot do it, many a gentleman with some judgment and taste, by considering the locality closely, will accomplish it to his satisfaction.

It is in a proper distribution of trees and shrubs and of the other ornamental parts, but mainly of trees and shrubs, that the secret of the arrangement of a place consists.

I employ the word "secret" without attaching the real meaning to the word. After all, it is a secret only for the uninitiated; and I will try to disclose it: but I repeat, it is in this part of the art alone that an artist must be well informed; and, without it, he will be unable to do any thing satisfactorily.

With a good knowledge of trees and shrubs, guides may be established by everybody in forming what I may call scales, or tables of the elements, which are in reality the colors with which to paint the picture.

Thus scales and tables are formed by bringing together first a complete list of all the trees and shrubs which may be employed to advantage in the place, considering the location, climate, and quality.

This catalogue, including deciduous as well as evergreen trees and shrubs, is not to be put together in alphabetical order, but to commence with the lowest or dwarfiest kinds; continuing gradually through the middle-sized ones up to the tallest sorts, or *vice versa*.

Other lists will then have to be extracted from that first one by bringing together all the evergreens in one particular list, and also the deciduous kinds in another.

Then lists on which trees of peculiar forms, of particular foliage, if large or small; of trees of early spreading or with late foliage; of trees of upright, horizontal, or weeping forms; of dark-colored or light-colored foliage; of dusky or glossy foliage; of dense or light character. — must be brought together, but each list always in order by sizes.

According to the character of the planting to be done, particular lists of shrubs and of trees for massing, for groves, and for single planting, are not without use, and will frequently prevent errors.

Trees and shrubs are the colors to work or paint with in landscape-gardening; but instead of mixing the various graduations of the required shades and tints from a limited number of primitive colors, as the painter has to do, the landscape-gardener, like the workman in a manufacture of Gobelin tapestry, has to have every one of his shades or tints already mixed and prepared, nicely laid near at hand, so as to find what he wants, and

when he wants it, without any loss of time, and without being obliged, to save time, to employ in haste, at random, some other shade or tint that will not answer.

Once all this prepared, an easy distribution of the trees and shrubs follows of itself.

Here the artist requires some knowledge of perspective. The tables, or lists, will help him along, under these circumstances, by the indication of the heights.

Whatever may be planted in a place ought to be distributed or located with a double aim. Often there are three different objects: in very large places, they may be even repeated several times.

In a small lot, it may be done with a single object in view; and, most generally, it must be done so.

I am going to try a simple illustration of a good distribution of trees and shrubs in a place that may answer for obtaining a single object; but one thing must be kept in mind here, and this is of the greatest importance.

Do not keep your attention as much on the distribution and location of your trees and shrubs, as a general thing, as on the outlines of your lawn.

The lawn is the space left between you and the pictures that the planting will produce; and, if you do not respect its outlines, the whole will be spoiled, whatever may be its shape, undulations, or declivities.

I do not call *a lawn* a grass-plot in the front of the house, or on any other side of it, scattered with irregularly-planted shade-trees touching each other on their tops; hiding the house itself, and obliterating from every part of the place such beauties it may offer from other parts of it.

There may be shade near the house without spoiling other effects. It requires a few single standing shade-trees at a reasonable distance from the dwelling, located in the right place. A few trees with tall, bare shafts and fine heads—i.e., American elms, sycamore-maples, Norway maples, &c., with limbs spreading horizontally on a sufficient distance over the ground, near enough to give the benefit of their shade without obstructing the vista, but sufficiently distant from the building to not injure it—will answer the purpose.

The lawn must be *a lawn*,—an open space of grass accessible to the sun

and the free circulation of air, where grass can grow freely; where, in the morning or in the evening, you may cover with your eyes a large surface, and, as on a stage, notice at one glance all the changes of decorations produced by the long shades cast over it by the trees on one side, and the brilliant effects of the sun on the other. This is what a lawn should be.

With scattered trees all over the grass-plot, one may be right in saying that he cannot see the forest on account of the many trees.

Admitting a place for a lawn in this style, as illustrated by the following diagram, what is intended to be planted according to this rule are not single standing trees, but smaller or larger groups, or even groves, in the back-ground, — masses of foliage that may often be increased in dimensions, the farther off they are.

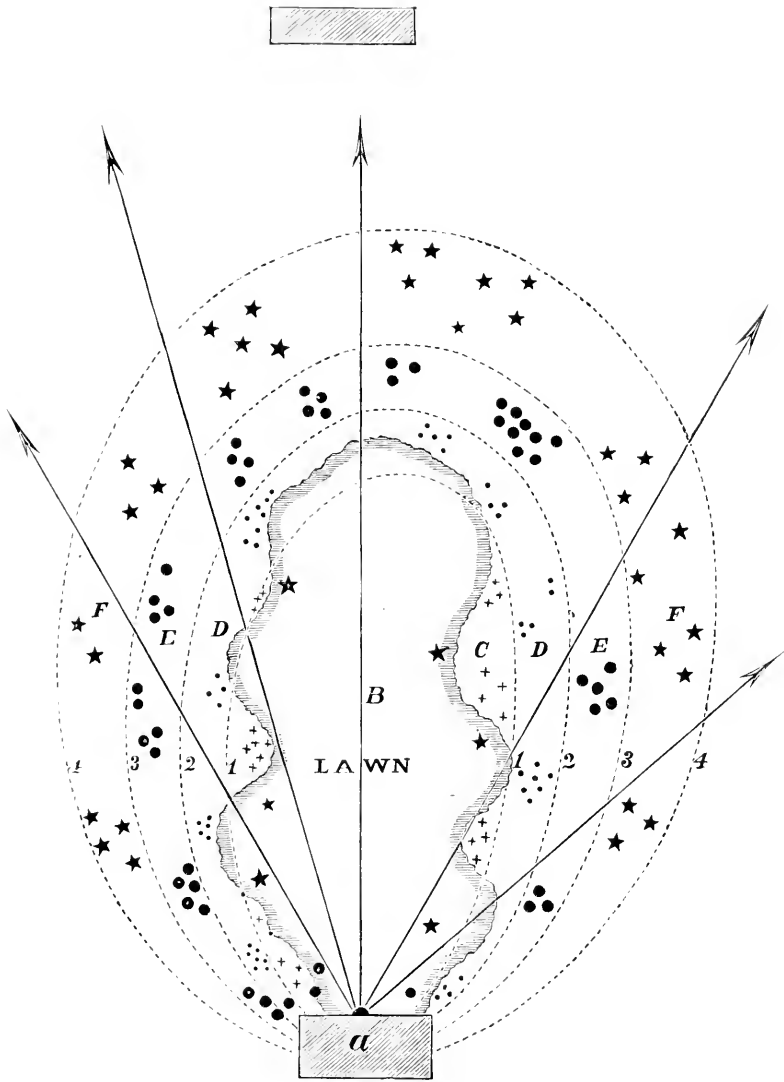
The number of these groups is not determined; but their location ought to be selected with regard to each other, so that more frequently groups of the 2, 3, and 4 region may come in view without other groups in front of them.

The necessary openings for vistas, if staked out before the planting, will have to be left open; or, if the nature of the land permits it, — as, for instance, in a lawn ascending from the house towards its end, — shrubs of such a size as will not reach the visual line may be employed in front without danger.

With such a distribution, it becomes clear that through the openings remaining between the groups, and by diversifying the colors of the foliage and the forms of the trees, there will be as many different aspects as openings; and whenever one looks through an open space, be it from the front to the rear, or from the rear to the front, the variety will be everywhere repeated.

Single trees and single shrubs of all sizes may be planted thinly and irregularly over these vacancies: for this purpose, trees of remarkable forms, of characteristic appearance, color, or flowers, or often show-plants that are too valuable to be used in the groups, may be employed.

These single trees and shrubs are not to be distributed according to their sizes, in their respective regions, as indicated for the groups; but, if not exactly the reverse, at least with a tasteful fancy. For instance, in front, or on the shade side of a group of dark evergreens in the 3's or 4's



A is a house with vistas from its main front in the directions marked with arrows. The open lawn desired is indicated at B, and by an undulating line forming the outskirts of it. Four dotted lines, indicated by 1, 2, 3, 4, show the division-lines between the various heights of shrubs and trees, in which the distribution of the subjects given as ornament outside of the lawn has to take place: *f i*, at C, between the lawn itself and the line 1, shrubs of from three to ten feet; between 1 and 2, on D, shrubs from ten to fifteen or twenty feet; between 2 and 3, on E, small-sized trees of from twenty to forty; and, on the last space, trees of the larger and largest size.

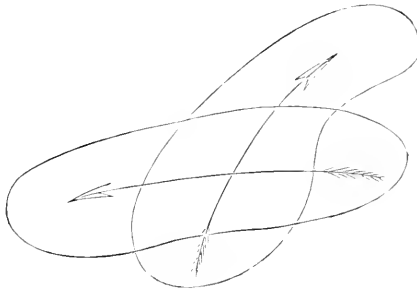
region, there may be some two or three low-growing, broad-leaved, and light-colored shrubs ; for instance, *Hydrangea hortensis* or *arborescens*.

Near a group of low deciduous shrubs in the first region there may be an Irish juniper or a *Podocarpus japonica*, and so forth.

In this distribution, the artist has a wide scope for displaying taste and fancy ; and it will be understood by doubtful readers, that, in spite of the mathematical distribution of the trees and shrubs, such a place, well arranged, will not exactly look like a deep saucer, nor like a Roman arena.

The diagram given here is of the plainest form for a better understanding only. It does not happen often that the outlines are regular, or the different regions of equal width : in a small place, *f* 1, the first region for the shrubbery may occupy for itself as much space as the three farther ones.

If there are two lawns, or even more, or two lawns intersecting each other, as shown by this sketch, the arrangement must first be made separate for



each of them, without regard to the other, and then the planting removed in all the places where the same regions of the two lawns will intersect each other.

Thus may be formed two quite independent lawns, each one presenting the beauties of a single one, arranged with the greatest care, without interfering with each other.

The trees and shrubs once distributed, the drive and the walks, if not already on the ground, may be drawn or staked out where they should be located, without regard to the intended groups, but certainly with the con-

sideration of such features as may be on the ground. Such groups as may come in the way will have to be removed farther, or suppressed. (This is understood in making up the plans.)

The laying-down of the drive and walks will then determine a more correct distribution of all the single standing show-plants mentioned, which may be located at irregular distances right and left along them, so as to present themselves better to the eye of the visitor, but still in such a connection with the groups near by as to form the contrasts or effects already mentioned.

How far this system corresponds with walks and drives already established, or with native trees already on the ground, I shall try to explain in another article. There is no great difficulty about it ; but it requires some practice to bring them into the new arrangement.

Difficulties spring up on such places only where operations have been commenced without any conception or plan by some inexperienced hand, where many things already done will have to be taken into consideration.

In such cases, that occur not unfrequently, I compare the work to be done as troublesome as the job of a tailor getting cloth for a coat on which the owner has amused himself by sewing at random buttons and button-holes on it, but expects the tailor to leave them where they are to save expenses, to make them to fit together, but, nevertheless, make a nice coat.

E. A. Bauman.

RAHWAY, N. J.

HYBRID PERPETUAL ROSE NAPOLEON III.

PERHAPS there is no class of roses more generally popular than the subjects of our present notice. They combine in an eminent degree hardiness of constitution, vigor of growth, elegance of foliage, and beauty and fragrance of flower.

The term "perpetual" is, however, somewhat a misnomer ; for though by attention they may be made to bloom at any season, yet they are by no means as constantly in bloom as the tea or Bourbon roses. They, however, have the advantage of being hardy ; and, if the June bloom is not allowed

to come to blossom, we often obtain a fine autumn display of flowers.



These late blossoms are, however, seldom as fine as the flowers which June

gives us ; for June is pre-eminently the month of roses, and then only does this queen of flowers attain its fullest glories.

To us, roses out of season never seem as beautiful as when they welcome the long days of early summer.

It is not our intention to enter upon the subject of rose-culture, which has been so often and so ably discussed in our pages. Mr. Parkman's treatise, with which all our readers are probably familiar, is exhaustive upon the subject ; and no better cultural guide can be put into the hands of the novice in rose-growing.

We must, however, differ from the generally-received opinion, that any one can grow roses. Rose-culture requires careful attention, and the careless cultivator will get little reward.

If well grown in deep, rich, well-manured soil, roses will give abundant satisfaction ; but there is no flower which sooner runs out if neglected, or which is less able to take care of itself.

Probably no flower has more insect enemies ; and the cultivator has to wage a ceaseless and relentless war against a host of creeping and winged pests, or all his care in growing will be brought to nought.

The old saying, that any soil which will grow a cabbage will grow a rose, is perhaps true with respect to soil ; but the care required in the culture is vastly more in one case than in the other.

Every year is witnessing great improvement in roses. Varieties which were in great demand a few years since have made room for newer kinds, which probably, in their turn, will be forgotten. Many of the old varieties, however, still hold their own as standard kinds ; and it will be very difficult, and hardly desirable, to supplant them in the public estimation.

In England and France, many hundred thousand seedlings are yearly raised ; and some of those of recent years are of surpassing beauty. Such is the subject of our illustration, which certainly has no equal in vigor of plant, symmetry of form, and color of flower. We cannot say whether it is yet for sale in this country, but have little doubt that the enterprise of some of our nursery-men will speedily place it within the reach of all.

This rose is of the Général Jacqueminot class, although of fuller petal and of a more intense scarlet color. Its habit is good, and it will probably prove one of the most valuable of its class. Our figure is taken from "The Floral Magazine," plate 323.

A DESCRIPTIVE LIST OF SELECT FLOWER-SEEDS AND
FLOWERING-PLANTS SUITABLE FOR THE GARDEN.

WITH DIRECTIONS FOR THEIR CULTIVATION.

NO. I.

BEFORE "The American Journal of Horticulture" was announced to the public, I assented to have my name placed on the list of contributors to the work. I then expected to be able to furnish articles, occasionally, on floriculture, or on some other branch of horticulture, and thus show my interest in this new enterprise; hoping to give some useful hints to those who were seeking information on the subject in which I have been so deeply and happily engaged for the last half-century. For various reasons, I have not been able to perform what I had promised to the proprietors.

Age, probably, had something to do in hindering the use of my pen. We cannot stave off old age: it will come, and with it a disinclination to make much effort, either of body or mind; or, in the words of the wise man, "the grasshopper is a burden," or little matters appear formidable.

But now I have promised again; and, if health is continued, I shall endeavor to give, from time to time, articles for the Journal relative to the cultivation of flowering-plants most suitable to ornament the flower-garden.

In the first place, I shall give a select list of the most showy annuals, perennials, and biennials that are named in most of the catalogues of seedsmen and florists. These catalogues, or many of them, contain from a thousand to two thousand varieties and species of flower-seeds and plants, embracing ten times more than one in a thousand would ever think of cultivating, even if they were all worthy of it.

A novice takes up a modern catalogue, and, in looking over the long list, is confused and perplexed, not knowing what to select or reject. Perhaps he may think the plant which has the longest name will give him the finest flowers. Suppose he should cast his eye upon a catalogue now before me as I write: he would probably be astonished to know that he could have the *Ipomea grandiflora alba picta carminca folis argenticis marmoratis* for the reasonable price of eighteen dollars for a hundred seeds; or he might have a hundred seeds of the NOVELTY *Ipomea hederacea grandiflora atrocarminea*

intus alba folis argento marmoratis for about the same sum. I think, however, that he would get more name than beauty of flower: there is something in a name. There is some humbug in catalogues as well as in other matters. It will be my object, in the articles I contemplate, to give selections of some of the most choice out of the long lists of ornamental plants which are presented to the public, with flourish of trumpets, in many catalogues.

The following species of annuals, with their varieties, if well cultivated in good soil, cannot fail to make the garden gay from July to November. For the early spring and June flowers, dependence must be placed upon perennial herbaceous plants, including spring-flowering bulbs. The aster, now called *Callistephus sinensis*, in all its splendid improved varieties, may be considered one of the most important flowers for August and September. Snapdragon (*Antirrhinum majus* and *nanum*), of many colors, although a biennial in dry soil, flowers the first year from seed, from July to hard frost; sweet alyssum (*Alyssum maritimum*), always in bloom; double camellia and rose improved balsams (*Impatiens balsamina*), not good for bouquets, but, when in spikes, fine for dishes and vases; Calliopsis, formerly Coreopsis, *Calliopsis Drummondii*, and some of the new dwarf var.; cockscomb (*Celosia cristata*); candytuft (*Iberis*), in various colors; larkspur, double var.; *Delphinium consolida* and *Ajacis*; pinks, flowering from seed the first year, or biennials; Dianthus, *Heddewigi*, *imperialis*, *chinensis*, in splendid varieties; everlasting flowers (*Helichrysums*), in variety; sweet-peas (*Lathyrus odoratus*); petunia, hybrid varieties; Drummond phlox, brilliant colors from pure white to scarlet and dark crimson; portulaca, all colors, fine for masses; mignonette (*Reseda odorata*); mourning-bride (*Scabiosa atropurpurea*), sporting into many colors and shades from pure white to almost black, in bloom from July to November; ten-weeks stock (*Mathiola annua*), numerous varieties and colors, in bloom to November; marigold, the old-fashioned flower, and the new dwarf *Tagetes signata pumila*; pansy (*Viola tricolor grandiflora*), a great favorite with all; double zinnia (*Zinnia elegans fl. plena*), one of the modern and most beautiful novelties; Tom Thumb nasturtium (*Tropaeolum nanum*), choice bedding-plants of various colors; four-o'clock (*Mirabilis Jalapa*), a great favorite with some, but cannot be used for bouquets, or any other way for table ornament.

CLIMBING-PLANTS. — *Maurandia Barclayana* in various colors ; cypress-vine, red and white (*Ipomea quamoclit*) var. ; *Thunbergia alata* in variety ; *Lothospermum scandens* ; *Cobæa scandens* ; *Calempelis scaber* ; *Loasa aurantica* ; canary-bird flower (*Tropæolum canariense* or *aduncum*). None of these will succeed well unless started in the greenhouse or hot-bed. The varieties of the morning-glory, scarlet bean, and hyacinth-bean, are well known as suitable for covering screens, walls, &c. Tall nasturtiums are very showy climbers, and may be used for the same purpose.

TRAILING OR PROSTRATE PLANTS. — All the nemophias, dwarf convolvulus, *Abronia umbellata* ; eschscholtzia, *Sanvitalia procumbens* ; *Lobelia gracilis*, with its improved varieties ; *Nolana atriplicifolia*, with alyssum and portulaca already named.

EVERLASTING FLOWERS. — In addition to the helichrysums, there are *Ammobium alatum*, *Aerolincum roseum*, *Rodanthe Manglesii* in variety, globe anaranthus (*Gomphrena globosa*) in variety, *Xeranthemum annuum* in variety.

TALL-GROWING PLANTS. — Cannas, double sunflowers, *Ricinus sanguineus*. The following annuals may be added to this list if more are wanted : viz., *Chrysanthemum*, *carinatum* and *coronaria* in variety ; *Ageratum Mexicanum* ; *Brachycome iberidifolia* ; *Cacalia coccinea* and *aurca* ; *Centaurea*, various sorts ; *Goldtias* ; *Senecio elegans fl. plena* in variety ; and varieties of the *Silene*. Most of these last-named are very pretty, and useful for bouquets. *Amarantus tricolor* and *melancholicus ruber* and *Perilla nankinensis* are cultivated for the beauty or novelty of the color of their leaves.

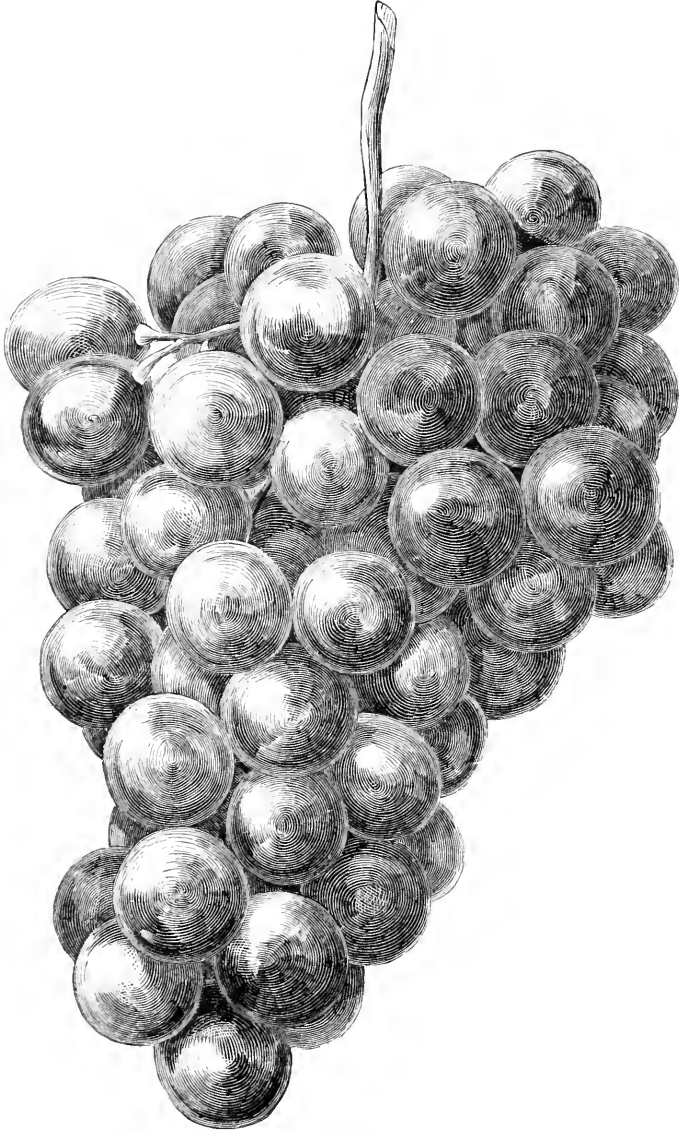
Joseph Breck.

ROGERS'S No. 9.

THE engraving represents a medium-sized bunch of No. 9. This variety, and all the numbers between and including Nos. 5 and 14, are hybrids between the white Chasselas and native, and all of a red or light-red color ; not one of this mixture being black, as was the case with many of those from the Hamburg.

The vine of No. 9 is very vigorous, and sometimes very productive ; the

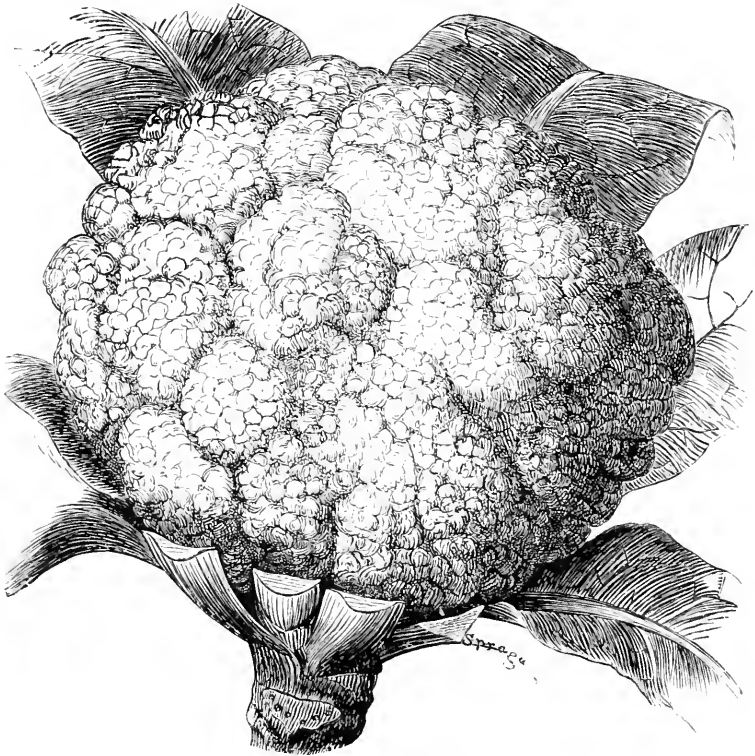
fruit never rots ; the wood is rather long-jointed ; young foliage of a reddish hue. Bunches long and compact, resembling Frontignac in form ; berries



round, medium size, sweet, with pleasant aroma. Ripens among the earliest.

THE BOSTON-MARKET OR IMPROVED EARLY PARIS
CAULIFLOWER.

THIS is one of the finest varieties of this delicious vegetable grown, and is very popular with the market-gardeners about Boston, who find it particularly suited to this climate. It has been brought to its present state of perfection by a careful system of cultivation, and selection of specimens



from which to grow seed. It is about the only variety grown to any extent for this market.

It is very early; produces uniformly large and fine solid flowers, or heads, of snowy whiteness and excellent flavor. The specimen from which this

NOTE.—We are indebted to Messrs. Washburn & Co. for the subject from which this engraving was made.

drawing was made was one from a field of this variety grown from seed raised by Mr. George W. Pierce of Malden, Mass. Weight of specimens seven and a half pounds ; diameter ten and a half inches ; circumference thirty-one inches : length of foliage twenty-nine and a half inches.

To grow the cauliflower to perfection, the soil should be new, deeply dug, and highly enriched. An open, clear exposure should always be selected, free from the shade of trees or buildings. No particular skill will be required during their period of growth. The soil should be frequently stirred, and kept free from weeds.

Owing to the excessive heat of our summers, the attempts made at raising seed here often fail ; consequently good seed is scarce, and always commands high prices. Most of the seed sold by seedsmen comes from Europe, where, owing to the mildness of climate, it is grown with more certainty.

C. N. B.

FRUIT-GROWING AS A SPECIALTY.

A GENTLEMAN in charge of the agricultural department of an Eastern paper of large circulation has raised the question, whether fruit-growing as a specialty can be depended on for a livelihood.

It cannot be denied that persons engaged in the culture of fruit meet many times with disappointments ; but it would be well, before condemning the business, to inquire into the causes of failures, and see whether the trouble is not chargeable more to the person engaged in it than to the business. One great cause of failure is inexperience in the culture of fruit. Very few of those who embark in the business know any thing about it ; and, if they make great mistakes, it cannot be wondered at, any more than the mistakes of inexperienced merchants or manufacturers.

There is no occupation where a thorough knowledge is of more importance than in fruit-growing.

Another cause of disappointment is the unsuitableness of the locality for the kinds of fruit cultivated. In selecting a locality for fruit, it is important to know how severe the winters are ; whether it is subject to

late spring and early fall frosts, or extremes of wet and dry weather ; and whether the soil is suited to the kinds of fruit grown. Another source of trouble is in not knowing what varieties are the most profitable for market. Many have an ambition to have a very large number of varieties, and, when they come into bearing, find that some varieties are not one tenth part as profitable as others.

To inexperienced persons wishing to engage in the culture of fruit, I would advise, first, to become acquainted with the art of cultivating and pruning by reading the standard works and periodicals on the subject, and to counsel often with intelligent and experienced cultivators. Second, select a suitable locality for the fruit you wish to grow. Third, select such varieties as experience has proved to be the most profitable. Fourth, get as near a good city-market as possible. Fifth, be prepared to dispose of your perishable fruit by drying and canning when prices are very low for fresh fruit. Lastly, plant no more than you can give the best of care ; do every thing well and in the right time ; give determined battle to the insect enemies ; do not expect too much from young trees ; send nothing but good fruit to market ; make your brand respected by putting *some* of the best specimens in the bottom of the basket or box ; and then consign to an honorable and responsible commission-merchant : and, although you will have trouble and disappointments, I believe you will never regret having gone into the business of raising fruit.

J. A. D.

ST. JOSEPH, MICH.

SQUASHES.

ON about a fourteenth of an acre of light, poor land, manured with Peruvian guano at the rate of fifteen hundred pounds per acre, we raised this season a little over half a ton of Hubbard, Crookneck, Turban, and other squashes ; and the weight of the crop would probably have been greater if we had not gathered it in a hurry, dreading the frost of the 17th of September.

VIOLA TRICOLOR.

THE cultivation of the pansy has always been and still is a difficult undertaking with most amateurs. For many years, I endeavored to obtain and retain a good collection, but as often failed. When I purchased young plants from a professional florist, they generally did well ; but the heart's-ease is one of those delightful little creatures, like the busy bee, which must be kept in swarms, else it seems unworthy of notice. We do not want a few fine pansies ; we want them by the hundred, in every garden : and it is my design in this article to give such instructions, that all who read may find no difficulty in supplying their own wants in this particular.

No doubt, those who have the convenience of greenhouses, hot-beds, and garden-frames, will inveigh against my *simple* method of supplying the wants of a longing public ; but, since it is known that the possession of one flower begets a desire for the acquisition of others, professional gentlemen can lose nothing by the dissemination of my practical knowledge.

I have often read instructions like these : "The best soil is a mixture of equal parts of sand, leaf mould, and loam, which should be thoroughly mixed ; then fill your pots or boxes to within a half-inch of the rim ; press the soil firmly and evenly in the pots, which can be done most conveniently with the bottom of an empty flower-pot ; then sow your seed evenly over the surface, and, with the addition of a little more sand in the same soil, cover the seeds, say from an eighth to a quarter of an inch ; then press the soil as before, even and firm with the bottom of a flower-pot ; water sparingly, enough to keep the soil moist ; avoid either extreme. As soon as the plants appear, they will require your careful attention, as the least over-watering may cause them to 'damp off,' and suddenly destroy all your hopes," &c. All which may be very good in its place, which is not in a country-garden, where plants should be grown by the hundred, in the simplest possible way, if the rural districts are ever to enjoy this charming plant.

Now, I will tell the reader how very fine pansies may be grown in such quantity as may be desirable, and with almost no labor at all. *Viola tricolor* is nearly as hardy a plant as the common red clover of our fields. The seed will germinate wherever that of red clover could be expected to

flourish : so, for this very reason, it is not best to sow them in open ground in the fall. They will come up during any mild interval in winter, and then be destroyed before getting sufficiently strong to withstand the rigor of this season. But fine large pansies, from two to two and a half inches in diameter, cannot be grown on a poor soil. I am now (Oct. 26) sitting in view of a small bed of these flowers, where hundreds are expanded, of the above size, growing in a good brown loam slightly enriched with thoroughly decomposed manure. This bed commenced blooming about the 10th of June, and continued until stopped by very dry, hot weather, the latter part of July ; and early in September the second blooming commenced, giving us a perfect feast of flowers for nearly two months more.

No hot-bed nor frame was used to bring about this very desirable result. The seed, of the best quality, was purchased from a reliable dealer, and sown in light, rich soil, on the south side of a wall, about the first of March. A few warm days brought them up ; and they grew rapidly until the heat began to wilt them in the middle of the day, when some of the stronger ones were showing the bud. They were then carefully transplanted into the above-described loamy bed, on the north side of a fence, where they still remain.

The shade of a fence or tree is much better than the same side of a building. The pansy wants more light than can be had on the north side of a wall : and the finest specimens may be grown without any shade, when the midsummer is rather wet and cloudy ; but such practice should not be relied on where partial shade can be obtained.

In conclusion, let me recapitulate : 1st, Procure the best quality of seed, without regard to cost, and repeat this each season, because the pansy degenerates very rapidly when grown from seed promiscuously. 2d, Sow them about a month earlier than you would presume to put any other seed in the ground. 3d, Cover them about half of an inch deep, near the south side of a wall. 4th, When the sun gets too hot for them there, transplant to the north side of a fence or tree, in a soil not too rich nor too poor, not too light nor too heavy, and they will produce more beautiful heart's-eases, of every imaginable shade of blue, purple, maroon, yellow, and white, during three or four months of the summer, than can be produced with the same labor in any other way.

J. Millesan.



To the Editor of "Tilton's Journal of Horticulture and Floral Companion."

Sir, — I returned not very long since from a short visit to Russia, or rather to some of its western portions; and, as this country lies somewhat out of the usual course of travel, you may, perhaps, like an account of what I saw. As the Russian empire is of vast extent, — having stretched through three continents, until, by disposing of its American territory, it confines itself within two, of each of which it occupies no inconsiderable part, — although I travelled a long distance, I saw but little of it, and do not attempt an account of the different tribes that acknowledge its sway, nor of the various industries there practised, but must limit myself to imperfect relation of some things that came under my observation. Russia, so far as I saw it, may be succinctly described as a great plain, extending far eastward beyond where I penetrated, and westward through Prussia to the Rhine. When I say a plain, I mean that is its general character: not that it is everywhere a dead level, although much of it is so; for occasionally the light soil is swept up into ridges or knolls approaching the dignity of hills, but nowhere to that of mountains. The late Dr. Arnold said that he looked out from his window upon a plain that extended to the Caspian Sea; and, judging from what I saw, it seemed to me as if this was a literal rather than a figurative description of the country to which the remark referred. It is a great plain to the Caspian Sea. This plain consists of a light, sandy soil, in places of pure sand, but generally of sandy loam, which, though it may not appear naturally fertile, yet seems capable, if skill and judgment were applied to its cultivation, and a proper selection of objects of culture made, of producing fair crops, except so far as climate may interpose obstacles that neither can overcome. In the north-easterly parts of Prussia, where the soil does not

seem essentially different, the country is carefully cultivated ; and although the various crops, generally of rye or other grain, may not appear peculiarly luxuriant, yet neither do they strike the passer-by as wholly the reverse, and seem to justify the inference, the country not appearing dissimilar, that the same means would produce in Russia similar results, unless, being somewhat farther north, climate would prevent their success. As it is, the two countries, in their cultivation, appear in strong contrast ; and while, even in this part of Prussia, well-cultivated fields, herds of cattle in the pastures, farm-houses surrounded by large barns, although by no means equalling those portions of that kingdom lying farther westward towards the Rhine, make it appear comparatively populous, and as if long occupied, in Russia, after passing the Niemen, the large tracts of forests, the scattered villages, and the sparse cultivation, make the country seem an unoccupied waste. The part of Russia that I passed through is probably the most uninteresting, and, in an agricultural point of view, by no means the best part of its territory. The portion of it that lies south-easterly from Moscow is represented as possessing a much milder climate than the part that I visited, and a soil sufficiently fertile to make it one of the principal corn-producing countries of Europe. After passing the westerly frontier, a by no means inconsiderable part of the country that I saw was covered with forests. These forests consisted of young trees. — firs, or other evergreens, and white birch. I saw no large or old trees ; and the general appearance induced the supposition that these forests had been cut over at no very remote period, and that the present was a subsequent growth of young wood. At intervals, however, throughout the extent passed over, the land was cleared of forests, and devoted to cultivation ; generally to the raising of grain-crops, but sometimes to grass or pasture. This was especially the case where a village had been established ; and fields were seen, not unfrequently quite large, of rye, wheat, oats, and occasionally of potatoes, with some flax, — rye, or what I took for rye, being in much the largest proportion. The crops did not look promising : the season had been and was very dry, and they probably had suffered for the want of rain ; but there was nothing in their appearance that led to a belief that the soil had been very thoroughly cultivated. The absence of comfortable, tidy farm-houses and out-buildings, and the want of any appearance of thrift in the villages, led to the conclusion that agriculture here had not received much attention ; and that, taking into consideration the character of the climate, and the probably greater attractions of other parts of the empire, some time must yet elapse before this part of Russia would become sufficiently populous to cause such agricultural capabilities as it possesses to be very fully developed. I ought, however, to say, that, travelling by rail, the portion of country passed over was probably that most recently settled, while that longer occupied very likely would have presented a different appearance. Between the frontier and St. Petersburg, the country is not populous. A few large towns are passed, and numerous villages : these last are of small houses built of wood, some of frame, but more generally of logs covered with thatch, and by no means attractive in appearance. In the towns were some large buildings, apparently of brick ; and towards St. Petersburg some that appeared to be villas, and large farming establishments, with extensive out-buildings. The

country is unenclosed: the herds of cattle at pasture are attended by keepers, mostly women or boys, to prevent their straying, or encroaching on the cultivated fields. Although, as I have stated, the soil is generally light and sandy, yet in some places there seemed to be deposits of peat, into which the fires, that were devastating the forests in many places as I passed through them, had penetrated, causing great damage, and resisting all efforts to extinguish them. The country did not appear as if it suffered for want of water. Besides the Niemen and the Dwina, other streams and water-courses were not unfrequently passed. The Niemen and Dwina are large rivers. Upon the first named, I noticed some navigation by means of large boats: very probably the same is to be found on the last, although I did not happen to observe any as I crossed it. The Neva, that at St. Petersburg divides into several branches, some of which are connected by means of canals, — thus giving access by water to different parts of the city, — affords transport for a supply of fuel and other articles, by means of boats of great size, from the upper waters of that stream. Besides these rivers and streams, there are numerous lakes, some of large size, one of which, the Lake of Laguda, is not far from the city of St. Petersburg.

In a first visit to a strange country, though the view to be obtained of it is only such as can be caught from the window of a fast-moving railway-carriage, to be enabled, from seeing them at their labors and amusements, to form some opinion of the outward forms of the civilization of its people, slight and imperfect as is the information thus obtained, is never without gratification; but, aside from this source, the main interest attending a journey to Russia is to be sought in its cities. The country is not an exciting one to the traveller.

The term "scenery" is intended to refer to views of grandeur and sublimity; lofty chains of snow-covered mountains, with deep gorges and rocky precipices; or to those that, less grand, are still wild and picturesque; a lake surrounded by precipitous mountains, high upland valleys amid hills whose sides are clothed with wood, perhaps a mountain-stream rushing through them, such as may be met with among the Swiss Alps; or even landscapes of a tamer and more domestic character, — smooth grassy slopes and valleys, with groves and trees about some gentleman's seat, pastures stocked with sleek cattle, and farm-houses that seem abodes of ease and comfort, such as England is constantly presenting under their most attractive forms. In none of these acceptations of the term can there be said to be, in that part of Russia that I saw, any scenery at all. It is everywhere one vast broad, rolling, or level plain, thinly peopled, and partially covered with forests, monotonous in its vastness, and dull and dreary from the absence of any signs of activity and animation. The traveller constantly finds himself in a vast circumference, whose bounds on all sides are the horizon, the central point in a great plain; and he at first hopes, as he approaches it, that different views will open before him. But no: as he proceeds, the horizon rises before and closes behind him, and he still continues the moving central point of this same broad plain.

As might perhaps be inferred from the climate and character of the country, gardening has made but little progress in the western part of Russia. About the stations on the railways, a portion of ground is usually enclosed, laid out

with walks, and planted with trees, and beds of flowers, as is the case in parts of Germany. These grounds, or gardens, especially as most of the stations have buffets or restaurants attached to them, seem to afford places of resort to the rural population; and with the exception of the grounds or gardens about the imperial country palaces or residences of the nobility, the public gardens or promenades in St. Petersburg, and an extensive park on the banks of the Neva near that city, these were the only attempts at ornamented grounds that I noticed. In the city of Moscow I saw a strange mixture of churches, palaces, and cottages. Some of the houses of the nobility had fruit or other gardens attached to them. In many of the palaces and great houses, a large space is appropriated to a winter-garden, and stocked with plants and flowers; thus enabling their occupants to satisfy a taste, that, in more southern countries, finds its gratification in the open air, which the climate here forbids.

Fruit of different kinds — early pears, peaches, plums, cherries, strawberries, and raspberries — seemed to be in ample supply in the market of St. Petersburg and at the railway stations. Peaches, though handsome, were of indifferent quality: the strawberries were large, fine, and very good. With the exception of strawberries, raspberries, and perhaps cherries, all these fruits were, I suppose, brought from a distance. I presume the climate of St. Petersburg is too cold to permit the cultivation of fruit-trees; at least, I saw none. At Moscow, I saw in the gardens in the city some apple and pear trees. To the eastward of that city, at some distance, I was told that a good many apples and pears are raised.

I can say but little of the flora of Russia. The flowers that I saw in cultivation, mostly annuals, were such as are common in all parts of Europe. Patches of wild flowers on the roadside and in the pastures were frequently seen, but none that were particularly beautiful; a plant producing a long spike of purple flowers being most noticeable and most common.

The facilities for travel in Russia, although much greater than they were a few years since, are still very imperfect in comparison with those in most other parts of Europe. A railway extends eastward from the frontier to the upper waters of the Volga, from whence, by means of steamboats on that river, there is a communication with the Caspian Sea; and another from St. Petersburg south-westerly through Warsaw to both the Prussian and Austrian frontiers, where it connects with the roads running through Germany. Other railways are in contemplation or progress, one of which, connecting the western cities with the Black Sea at Odessa, and affording means of transport to the products of a rich, fertile agricultural district, will soon be completed; and probably, before no very long time has elapsed, all the western and southern parts of the empire will be furnished with means of intercommunication.

The cultivation of beets for sugar is a not unimportant branch of rural industry in many parts of Europe, and receives much attention in portions of Russia, where a good many are raised; and manufactories for converting them into sugar are established.

In returning from Russia, I passed through a part of Poland. The character of the country and soil was not unlike that of Russia, except that it was more

cleared of forests, and the cultivation appeared rather better; this improvement in cultivation being more marked down the Valley of the Vistula, between Warsaw and the Prussian frontier. Here there were several large towns: the country appeared comparatively populous; and there was a greater proportion of the land cultivated, appearing as if it had been longer occupied than the territory to the northward between the Niemen and St. Petersburg. The trees here changed, too, somewhat in character; for although firs, evergreens, and white birch, were the prevailing growth, yet I also noticed elms, oaks, ash, maples, and some other kinds. In and about Warsaw, I saw some orchards of large apple and pear trees.

Joseph S. Cabot.

PARIS, Aug. 10, 1868.

“PURE WINES: WHAT AND WHERE ARE THEY?” — Under this heading, in the September number of your Journal, there is a communication from your Missouri correspondent, who makes a very liberal use of my name in connection with cooking potatoes, building mills, baking bread, &c. Now, I do not understand the question as one in relation to the preparation of our vegetable food for the table, but whether we can change the natural chemical composition of that food without impairing its nutritious and wholesome character; or, if you please, whether we can add sugar to the juice of the grape without impairing the nutritious and wholesome character of the wine.

Sugar, or the saccharine principle, exists in every form of vegetable food, and is essential to its nutritious character. It is to the sugar they contain, that fruit, grains, and other vegetable productions, owe their nutritious properties. We may infer from this that sugar forms a very proper addition to our food; yet, to be nutritious, it must remain in its natural combination with the other nutritious properties of vegetables.

Sugar, or the saccharine principle, is the source of all malt and distilled liquors; and we may therefore say that it is the source of all the intemperance and drunkenness of the land, as vinous fermentation will transform it into alcohol. When sugar, or the saccharine principle, is separated from the other alimentary substances of vegetables, if the sugar-kettle is used, evaporation first separates it, and vinous fermentation then forms the alcohol; but, if the still is used, vinous fermentation first forms the alcohol, and distillation then separates it. Yet alcohol is the same poisonous or intoxicating substance. So much in explanation of my *leave-alone doctrine*.

As to wines, I maintain that pure wine is the fermented juice of the grape, to which nothing has been added; that the grape contains yeast, which, by vinous fermentation, changes the expressed juice into wine. This is the work or growth of Nature: therefore it is called the “fruit of the vine.” It is a natural liquid food, the type of our vegetable food. This may differ in aroma, in alcoholic strength, in acidity, and in astringency, with many circumstances; yet it will contain all the alimentary properties of the grape in their natural concordant proportion. This is essential to its nutritious and wholesome character: it is this which adapts it to the wants of man; and it is this which relieves it of all seductive influence and intoxicating power.

The school of Dr. Gall, which now flourishes in Missouri, teaches that "*wine having all of its natural acidity and astringency is diseased, — not wholesome nor palatable or agreeable: and therefore, when the juice of the grape does not contain sugar enough, more should be added; and, if it contain too much acid, sugar and water should be added, as both are component parts of the juice of the grape. The wine will be just as pure, more healthy, and more palatable, consequently better.*"

This, I think, is a mischievous delusion, as sugar added to the juice of the grape is changed by vinous fermentation into alcohol; and it is simply adding alcohol and water to the wine. No acid is neutralized, as the sugar can be only used as a source of alcohol.

As an illustration of what may be done by adding sugar and water to the juice of the grape, take, if you please, one gallon of the juice of the grape, the alcoholic strength of which is ten per cent; add sugar to this until its alcoholic strength is thirty per cent; then tone this with two gallons of water. Vinous fermentation will change the whole to wine. You will now have three gallons of mixed wine, containing its natural alcoholic strength, — ten per cent, — with only one-third of the other nutritive properties of the grape.

Again: take the pomace, or husks, after the bulk of the juice of the grape has been expressed; add sugar and water: the natural yeast of the grape will produce vinous fermentation, and change it into wine. This is simply alcohol diluted with a large quantity of water, modified more or less by the delicate qualities of the grape; yet a large proportion of our native wines are of this class.

This practice, which has nothing to recommend it but the prospect of gain, throws open the door to every liquor-compounder in the country, who, *using the reason God has given them*, can imitate every kind of wine in the country with their alcoholic liquids, and then assert with confidence that their wines are as pure as any in use; that they contain nothing but what the grape contains; that they are free from the natural acidity and astringency of the grape, and therefore healthy, and agreeable to the taste. More than one-half of the wines of commerce in this country are now of this class. *J. M. McCullough.*

CINCINNATI, Nov. 7, 1868.

A NEW VEGETABLE. — *Phytolacca [decandra?]* is referred to in a recent number of the "*Revue Horticole*," by M. Vilmorin, as a desirable table-vegetable, — the stems being tender, and suitable for soup, or to be eaten as asparagus, and the leaves affording a good spinach. The plant is enormously productive, perfectly hardy, and decidedly ornamental.

WEEDS on walks may be kept under by watering the gravel with the following solution: Dissolve two pounds of blue vitriol in an old pan, and then dilute it with six or seven gallons of water: apply this through the fine rose of a watering-pot, and it will destroy every sign of vegetation, and after a shower render the gravel as bright as when just put down. The walk should not be trodden on when newly wetted, as the vitriol will destroy the shoes.

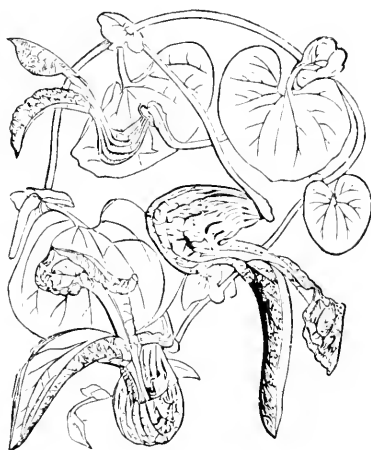
NEW PLANTS. — We copy from "The Floral World" the following : —

Erythronium giganteum, Gigantic Dog's-tooth Violet (Bot. Mag., t. 5714). — Liliacæ. The handsomest of its race hitherto introduced to this country. It is a native of North America. It is a tall herb, the leaves dark green, blotched with dark brown ; flowers in a scape of two to four, white with gold-yellow centre.

Aristolochia ringens, Gaping-flowered Birthwort (Bot. Mag., t. 5700). — Aristolochiæ. A magnificent stove-climber from the plains of Santa Cruz, in New Granada, where its roots are esteemed as an antidote for snake-bites. It is a tall, slender, perfectly glabrous plant, with orbicular-reniform leaves, of a pale



ERYTHRONIUM GIGANTEUM.



ARISTOLOCHIA RINGENS.

green color, and flowers from seven to ten inches long, pale green, marked and reticulated with dark black purple. The perianth is a ventricose sac, two and a half inches long, woolly inside ; the tube is divided into two very long lips, one of which terminates in an ovate or reniform blade.

Cochliostema Jacobianum, General Jacobi's Cochliostema (Bot. Mag., t. 5705). — Commelyneæ. A magnificent epiphyte, "combining the foliage of a gigantic Anthurium, with masses of inflorescence, which for size, delicacy, and beauty of tints, cannot well be surpassed." The leaves are three to four feet long, four to six inches broad, deep green, edged with brown. The peduncles are as thick as the finger, white, tinged with pink, bearing an immense panicle of flowers, which are delicately tinted with pink and purple colors. The plant is a native of Ecuador.

Lycaste Barringtoniæ, var. *grandiflora* (Bot. Mag., t. 5706). — A fine variety of an old and favorite orchid.

Begonia falcifolia, Sickle-leaved Begonia (Bot. Mag., t. 5707). — Begoniaceæ. A lovely species, native of Peru. The leaves are falcate-lanceolate, unequally lobed; the flowers in panicles, of a rosy-pink color.

Oncidium cucullatum, var. *nubigenum*, Alpine Oncidium (Bot. Mag., t. 5708). — Orchideæ. An extremely pretty orchid from Ecuador, where it grows at an altitude of eleven thousand to thirteen thousand feet. The leaves are solitary, the racemes simple and many-flowered; the flowers purple, with large white lip.

Nyctocalos Thomsoni, Assamese Nyctocalos (Bot. Mag., t. 5678). — Bignoniaceæ. A beautiful stove-climber, with compound leaves and beautiful tubular flowers, which are seven inches long, pure white, expanding at night, and dropping next morning.

Vitis heterophylla, var. *humulifolia*, Hop-leaved variety of various-leaved



NYCTOCALOS THOMSONI.



VITIS HETEROPHYLLA (var. HUMULIFOLIA.)

Vine (Bot. Mag., t. 5632). — Ampelideæ. An extremely pretty Japanese vine, which is quite hardy in this country, and well adapted for clothing walls and trellises. The stems are bright red; the leaves resemble those of the hop; the berries are pale blue.

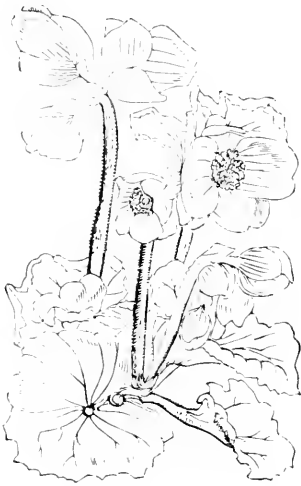
Begonia roseiflora, Rose-flowered Begonia (Bot. Mag., t. 5680). — Begoniaceæ. Another charming begonia, with large rosy-pink flowers. It is stemless, with concave orbicular leaves borne on red stems and three-flowered scapes, the stems of which are red, and the flowers resemble those of the brier-rose.

Coburgia trichroma, Tri-colored Coburgia (Bot. Mag., t. 5686). — Amaryllidaceæ. A magnificent plant from the Andes of Peru, long known, but lately admirably flowered in the garden of Mr. Wilson Saunders. In general characters, it agrees nearly with others of the genus. The flowers, however, are pecu-

liarily attractive, the tube being deep red, terminating in a broad stripe of dove-color on each segment, the interior of the flower being pale pink.

Ipsca speciosa. Beautiful Ipsca (Bot. Mag., t. 5701). — Orchidaceæ. A beautiful terrestrial orchid, a native of Ceylon. The rhizomes are tuberous and hard, as large as a nut, or larger; leaf usually solitary from the rhizome; scape one to two flowered; flowers two and a half inches in diameter, golden-yellow, with faint red lines on the disk of the lip.

Hibiscus marmoratus, Marble-flowered Hibiscus (Bot. Mag., t. 5702). — Malvaceæ. A fine plant, native of Mexico: it flowered in the stove at Kew in February, but is described as a greenhouse-plant by Lemaire and Planchon. It is a freely-branching shrub, with bright green oblong-cordate leaves and smallish



BEGONIA ROSÆFLOKA.



COBURGIA TRICHROMA.

flowers, which are pleasingly mottled with bright pink, and bear some resemblance to the flowers of *Abutilon striatum*.

Dendrobium cumulatum, Clustered-flowered Dendrobe (Bot. Mag., t. 5703). — A pretty Moulmein species, the flowers of which are produced in sub-globose corymbs at the nodes of the rachis: they are of a clear rosy-lilac color outside, whitish inside, the pedicels deep purple.

Raphistemma ciliatum, Ciliated Raphistemma (Bot. Mag., t. 5704). — Asclepiadææ. A pretty, delicate climber, with elegant ovate-cordate leaves, and corymbs of flowers of a pale greenish color, borne on long filiform reddish pedicels.

Opuntia Rafinesquiana, Hardy Indian Fig. — Cactaceæ. This interesting plant is a native of the Valley of the Mississippi, where it inhabits dry, sunny plains. It is the hardiest known species in the whole of the cactaceous order, and admirably adapted for cultivation in English gardens, where it will with-

stand the severest frost. The plant forms a prostrate spreading mass of flat, thick, rounded, bat-like joints of a dark-green color, sparingly beset with spines, and in the summer produces numerous bright yellow flowers, which are succeeded by red fleshy fruits, which are of a sweetish, tame, insipid flavor. We have to thank Messrs. Hooper of Central Avenue, Covent Garden, for the opportunity of figuring this rare and peculiarly-interesting plant. We have been supplied by them with growing specimens, and hope in time to be enabled to form in the experimental garden at Stoke Newington an edging of cactuses, which will be at least a novel feature.

Tunica saxifraga flore pleno, Double-flowering Saxifrage Pink. — Caryophyllaceæ. The single-flowering *Tunica saxifraga* is a native of Germany, and has been known in cultivation here for a century at least. It is one of the loveliest hardy herbaceous plants known, and has always been scarce. This double-flowering variety is a novelty introduced here by Messrs. Hooper of Covent Garden, by whose favor we are enabled to figure it. The plant is of light tufted habit, growing about six inches high, and forming a cushion-like mass of grassy leafage, covered from June till October with rose-colored flowers, which are like miniature carnations. There has been nothing of its class introduced of late years more worthy the attention of the amateur of hardy plants than this, as it is not only unique in its beauty, but will thrive in any light sandy soil if fully exposed to sunshine.

Acrocomia sclerocarpa (L'illust. Hort., t. 547). — Phœnicaceæ. A fine Brazilian palm of large growth; the tall stem crowned with plume-like fronds; the fruits are hard globular nuts.

Cibotium regale, the Royal Cibotium (L'illust. Hort., t. 548). — A fine figure of this well-known magnificent tree-fern.

Calceolaria pisanomensis (L'illust. Hort., t. 549). — A good figure of a showy species.

WE clip the following from what has been published as the report of a meeting of the Alton (Ill.) Horticultural Society, held on the fifth day of November last: —

“Dr. Hull: Before the society adjourns, I wish to bring up one other matter; and that is, the course pursued by ‘The Journal of Horticulture’ in puffing unknown and probably worthless fruits into notoriety. [He mentioned several instances, among them the ‘Wilder Strawberry.’] A large portion of each number is taken up with puffs of this fruit, which has never been fruited out of the ground of the originator, and, for aught they know, may be perfectly worthless anywhere else. I believe the course being pursued by the Journal is a proper subject for the censure of all horticultural societies; and would move that this society condemn the action of the editors in the matter spoken of.

“E. A. Riehl: I second the motion. I am personally cognizant of the fact, that they have written to a person in this neighborhood, engaged somewhat in growing nursery-stock, soliciting advertisements of any new thing he may have, which they will illustrate, and puff into notoriety. They do this regardless of whether the article is worthy of notice or not. I think such a method of con-

ducting a horticultural or agricultural journal is deserving of censure ; and, for one, I shall vote for it.

“ Mr. Pearson opposed the motion in some very able and animated remarks.

“ Several members, while condemning the course of the Journal in respect to its want of principle, were opposed to the motion, believing that the society would be acting outside of its legitimate sphere by passing it.

“ Dr. Hull : I withdraw the motion. I simply offered it to get an expression of the society in regard to the matter ; and have accomplished all I desired.”

Our course heretofore has been to make no reply to the foolish and false things that have been said about us ; to manage our own affairs in our own way : but the remarks that we have copied above do our esteemed friend Col. Wilder, the Massachusetts Horticultural Society, and ourselves, so great injustice, that we depart from our rule to show our friends at Alton that they labor under a great mistake.

Dr. Hull, a gentleman whom we do not know, in his remarks condemns “ The Journal of Horticulture ” for “ puffing unknown and probably worthless fruits into notoriety.” “ Several instances ” are mentioned, “ among them the Wilder Strawberry.” What the “ several instances ” refer to we do not know, and we cannot answer ; but, in relation to the Wilder Strawberry, we ask, What right has any man to declare that it is a worthless fruit when he knows nothing about it ? as Dr. Hull must admit in his case. We do not believe he ever saw it, plant or fruit. Others *have* seen it ; and among those who have are the Fruit Committee of the Massachusetts Horticultural Society, who for three or four years have seen and examined it, not only on the tables of the society, but on the vines in the grounds of Col. Wilder, where they had a most excellent opportunity to compare it with many of the well-known and approved sorts. We would call attention to the *ad-interim* report of said committee, as published in the Journal for October, 1868, p. 222.

Does this look as though we had sought to puff a worthless “ fruit into notoriety ” ? Is it possible that it can be so “ worthless ” after it has been approved by said committee for several years in succession ? Is the opinion of the intelligent Fruit Committee of the oldest Horticultural Society in the country to go for nothing, and be entirely ignored, and even held up to ridicule by this town society, or rather by two of its members who never saw the fruit which they denounce ? What are such statements worth to any fair-minded man ? It is testimony from those who *do not* know ; while we have given the testimony of those who *do* know, and whose opinion is entitled to the greatest weight. The testimony of Dr. Hull and Mr. Riehl is just such as was taken by the Dutch judge in a trial that took place before him. Six men swore that they did not see the prisoner commit the crime, and knew nothing of the matter, while only two swore that they did see him perform the act ; and the judge decided the weight of evidence was in favor of the accused, and discharged him. Now, Dr. Hull is precisely in this position, because he never has seen these things of which we have spoken and given illustrations ; and because he does not know anything about them, either favorable or unfavorable, he therefore just shuts his eyes,

and cries "Humbug!" entirely ignoring the evidence of such men as Col. Wilder, C. M. Hovey, editor of "The Magazine of Horticulture," W. C. Strong, chairman of the Fruit Committee of the Massachusetts Horticultural Society, and James F. C. Hyde, president of said society, and many others who have seen and do know about the strawberry, and have said what they know in our magazine. If such men, who have been all their lives raising fruit, and are quite familiar with every variety in the country worthy of cultivation, do not know what a *good* strawberry is, will the *good* doctor, who has so great a sympathy for the public for fear they will be cheated, just come on to the village of Boston, and teach these gentlemen, so that they will hereafter know better than to recommend a fruit as good until they have consulted our Western friends?

We will briefly refer to the remarks of Mr. E. A. Riehl as quoted above. In reply to him, we affirm *that what he states is untrue; and, if he can produce such a letter, we will print it in the most conspicuous part of our Journal.* What say, Mr. Riehl?

And further: we shall not at present consult our enemies or our rivals. We hold ourselves responsible for what we publish, and never mean to swerve from the truth in regard to any matter that we give to the public. It has been our constant aim to give correct illustrations of new and valuable fruits, flowers, and vegetables, and reliable information concerning them, and *only such.*

If our course does not satisfy our contemporaries who have published the foolish remarks of these men with so much alacrity, then we hope they will keep on advertising us, and thus help to swell our large and rapidly-increasing list of subscribers.

OHIO HORTICULTURAL SOCIETY. — *Orchard Crops, Small Fruits, Evergreens.* — *Co-operative Discussion.* — The annual meeting of this society at Columbus the past month was well attended, notwithstanding very unfavorable weather. Nearly all parts of the State were represented; and the proceedings were quite animated and hopeful, although the fruit-crops the past season were generally quite deficient.

After the reading of *ad-interim* reports, and the annual address of President Warder, Mr. Starrs of Painesville, from a committee appointed last year, read a report on the deterioration or failure of orchard-crops. The committee had not been able to devote as much attention to the subject as its importance deserves: hence they were, by a vote of the society, re-appointed to investigate the subject another season, and report at the next annual meeting.

It was shown from the assessor's returns that the apple-crop of the State in 1867 amounted to about *ten million bushels*; and the peach-crop, one and a half million bushels: and the crops of that season were deficient in many parts of the State, though a better average than for 1863, especially the apple-crop.

The deterioration of the apple-crops has been pretty general throughout the State, though less in the lake-region on the north, and among the hills of the coal-measures of the south-east, than elsewhere. The causes of the evil, as far as understood, are various: first, exhaustion of the soil of its fertility or elements requisite for the health and fruitfulness of the trees; second, negligent

and improper culture and pruning; third, increasing severity of summer-drougths; fourth, deficiency and variability of atmospheric humidity consequent on the disappearance of the forests; fifth, increase of injurious insects; sixth, increase of fungous diseases. These causes operate in different degrees in different sections of the State.

The committee were not prepared to report very definitely in regard to the best means of preventing the evils, preferring to wait till further investigations may enable them to make a fuller report adapted to the different sections of the State.

For the prevention of insect-ravages, it was urged that hogs should be kept in orchards during the summer, or a flock of sheep turned in to devour the fallen fruit every two or three days. Dr. Warder spoke very favorably of the straw-band remedy of Dr. Trimble for catching the apple-moth. It has been described in most of the horticultural papers.

On *small fruits*, the discussion was confined mostly to the newer varieties. The Boudinot Strawberry of Licking County, O., was highly commended by several members. It is a seedling of the Wilson, said to be a few days earlier, more productive, the fruit as large and firm, of better flavor, and borne on higher stalks, and thus clear of the soil. The Nicanor, Charles Downing, and Jucunda Strawberries, also received commendation.

Of raspberries, the Naomi was spoken of by all who had seen it as the handsomest and best variety known; sufficiently hardy to stand the winters of Northern Ohio, where it had been tested for the past ten or more years. The quality of the fruit and its firmness had been well tested the past season by sending boxes of it to Boston, New York, and Philadelphia, in the hottest weather, where it arrived in good condition. The Clarke was also spoken of as a very promising and profitable variety, quite hardy, productive, and good.

Among blackberries, the Kittatinny had the preference. The Wilson was found a little earlier; but the habit of plant, and quality of fruit, were not as good.

Grapes did not occupy as much time as usual; and but little was elicited by the discussion which has not been already published. The belief was expressed that the Catawba could not be depended on in the Lake-shore region east of the Collamer Ridge; and the best vineyards were on elevated ridges of clay and shale lands. The earlier varieties of grapes had generally ripened well throughout the State; and the Iona had proved quite satisfactory wherever the vines were in bearing. A box of this fruit, from Judge Phillips of Erie County, was distributed in the meeting, and highly relished by those present, showing the excellent keeping-qualities of this variety.

The display of *potatoes* was quite an interesting feature of the meeting. It embraced some thirty or forty varieties; and considerable discussion was had upon their merits, &c. But the season had not been a favorable one for testing the quality of the early sorts.

Evergreens, and their utility for screens, belts, hedges, &c., as well as for ornament, was the subject of much interesting discussion; and is of growing importance to the State, now that the forests are so fast disappearing.

A plan was adopted for securing the co-operation of all the local organizations in the State in the discussion of topics of practical importance pertaining

to horticulture. A committee was appointed for the selection of a topic for each month's discussions, to be printed and forwarded to each horticultural and agricultural society in the State, with the request that they will each discuss the same, and have a report of such discussion sent to the secretary of the committee, who shall condense and collate the same into a general report, to be published in the agricultural and other papers of the State:

The *ad-interim* reports and other transactions of the society will shortly be published in pamphlet-form as usual. The officers elected for the ensuing year are, — President, J. A. Warder, Cincinnati. Vice-president, G. W. Campbell, Delaware. Secretary and treasurer, M. B. Bateham, Painesville. *Ad-interim* committee, N. Ohmer, Dayton; D. C. Richmond, Sandusky; Jesse Storrs, Painesville; W. E. Mears, Milford.

GRAPE-HOUSES. — In a number of grape-houses which have been under my care and observation for sixteen years and upwards, an unusual number of vines died during the winter of 1868. Had the roots been killed, I should have concluded that the borders had not been properly covered. Upon investigation, I find that where the houses have been opened, and air admitted freely on sunny days, no vines have died; that, where some little ventilation has been used, some few have; while, in those which have been entirely closed, one-half, and in some instances a greater portion, have died down to the sills. I do not pretend to know the actual cause of failure, but have thought it might be want of air.

Will you or some of your correspondents give their experience, and, if they have come to a different conclusion, state it through your columns?

WEST ROXBURY, MASS., 1868.

Robert Watt.

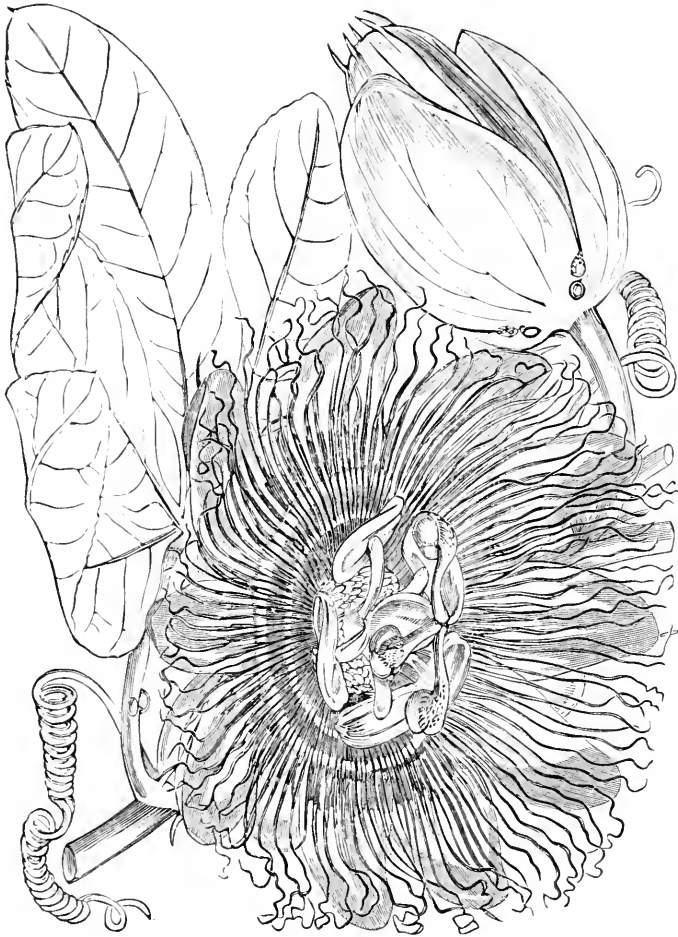
[Will some of our friends who have been unlucky enough to lose vines let us know how their experience agrees with that of Mr. Watt? — *Ed.*]

NO FEAR OF "TOO MUCH FRUIT." — Some indolent farmers assign as a reason for not planting orchards, that there will soon be "too much fruit," so that there will be no demand for it. We heard the same sentiments uttered fifteen years ago; and yet there is no appearance of "too much fruit," but there is evidently not enough of this luxury in any locality. For several years, fruit-growers have been amply rewarded in their outlay; and the demand, instead of diminishing, is annually increasing. Every farmer who has not an orchard should prepare to plant one. The soil for fruit-trees should be naturally or artificially drained and deepened with the subsoil-plough. A great many persons are prevented from planting fruit-trees by not having the soil ready for them in proper time. It is never too soon to commence draining and deepening the soil for an orchard, or for any thing else. — *Western Rural.*

[We think it is about time to hear the last of the "too-much-fruit" bugbear; at least, in the vicinity of Boston. We are not likely here to see the day when good fruit, and sound, healthy vegetables, will be drugs in the market.

When tomatoes are from four to eleven dollars a bushel, and Williams apples six dollars per bushel, — not barrel, — it is rather astonishing to be told that too much fruit is planted. — *Ed.*]

PASSIFLORA (§ *Granadilla*) CINCINNATA, *Mast., sp. n.* — Flowers and leaves of this passion-flower were exhibited at a recent meeting of the Floral Committee by Mr. Philip Frost, the intelligent gardener at Dropmore. The beauty of the deep green glossy leaves, and the rich color of the singularly long and twisted



rays of the fringe-like corona, excited much attention, and deservedly secured the award of a first-class certificate, which was made to it on that occasion. Specimens have been kindly placed in our hands by Mr. Frost, who tells us, moreover, that he raised the plant from seeds sent from South America. On examination of the specimens furnished by Mr. Frost, and on comparison with

those in the herbarium of the Royal Gardens, Kew, we find that the species is hitherto undescribed ; though dried specimens collected by Gardner in Brazil, not materially differing from the living plant, are in the herbarium.

The plant is a climber, with cylindrical, smooth branches ; the leaves are stalked, and digitate, or palmisect, with five smooth coriaceous lobes of a deep green color on the upper surface, but paler below ; each lobe is oblong-obtuse, with a very fine mucro at the apex, entire or irregularly lobed at the margin, and tapering at the base into a short, channelled stalk. The size of the leaves varies considerably, according to the part of the stem or branch to which they are attached. The main leaf-stalk or petiole is cylindrical, shorter than the blade, and provided about the middle with two sessile deep green glands. The stipules are linear or awl-shaped, about half an inch long, and quickly fall off. The flower-stalks are solitary in the axils of the leaves, cylindrical, shorter than the leaf-stalks, and bear a single flower.

The involucrel consists of three broadly ovate concave bracts, of a green color, very softly pubescent on both surfaces, about an inch and a half in length, and provided with a pair of glands at the base, — sometimes on one margin only, at other times on both. The expanded flower measures about four inches in diameter.

The calyx tube (or what is so called) is about a quarter of an inch long, cylindrical, contracted at the upper portion, concave at the base, where the stalk is inserted ; the limb of the calyx is divided into five oblong-obtuse lobes, each nearly two inches long, greenish on the outer surface, and provided near the apex with a small projecting horn-like process, whitish on the inner surface, and sprinkled with violet-colored spots, like the petals ; which latter are oblong-obtuse, shorter than the calyx lobes.

The corona consists of several rows of thread-like processes, the outermost longer than the sepals, twisted and curling like ringlets (hence the name), with alternate bars of purple and white at the base, but of a uniform violet hue elsewhere ; the remaining rays are much shorter, thread-like, a little thickened at the extremity, and of a violet or purple color ; the innermost series are bent inwards, and spring from the edge of a membranous cup. The gynophore, or stalk supporting the ovary, is short, encircled at the base by a membranous ring, and bears above five stamens, whose filaments are confluent below into a shallow cup, and a smooth, yellow, egg-shaped ovary, rather more than an inch in length. The latter in its turn is surmounted by three rather long club-shaped styles, spotted with purple, and terminating in large, two-lobed, yellowish stigmas.

Such is the arid description of this striking novelty. The brush of the artist can alone do justice to its singularity and beauty. The plant does well under Mr. Frost's care in a cool greenhouse, so that it may be safely recommended as a valuable addition to the list of greenhouse-climbers. — *M. T. M., in Gardner's Chronicle.*

ABOUT FRUIT. — I am not quite sure whether fruit is always brought to us as it should be. Pears and apples, no doubt, bear careful carriage, and, how-

ever suddenly they may ripen at last, are often a long time reaching the perfection of maturity, even after they have been gathered. But there is an essence which belongs to most fruit, and which begins to vanish the moment it is plucked. Even the short transfer from the garden-wall to the dish at dessert cannot be made without the loss of some of that subtle flavor which is conveyed by the living stalk from the sun-fed tree.

Fruit should be eaten alive, like oysters. There is an edge to the taste of a fresh-opened oyster, which comes, I suppose, from the surprise he feels at being suddenly scooped out of his shell. In a few minutes, this gives place to a feeling of alarm; and then, in an hour or two, to one of despair. When he is laid out with his brethren in a dish, the whole brood is hopeless and sad. They may still taste of life, but it is of life disappointed. But the fresh-opened oyster has no time to grow feverish or melancholy.

While a plum, for example, hangs upon its stalk, it is in some kind of magnetic correspondence with all the powers of Nature. Cut it off, and in time it dies, corrupt, unwholesome; and every moment in its progress from life to death is marked by a decadence of that essence which makes fruit delicious. Therefore, supposing that you pluck it ripe, the sooner a plum is eaten, the better for you. This, of course, applies most to tender, thin-skinned fruit.

A firm apple dies slowly. A nut holds out long against the debasing influence of separation from its source of life. But plums, figs, peaches, apricots, and strawberries begin to suffer directly they are gathered. This is the case even with pines, which are acceptable of bruises; but they contain such an apparent surplusage of flavor, that the first stages of their decay are not perceived except by a cunning palate.

I think the morning is the best time for fruit: I am not quite sure, though. The afternoon is good. But I don't recommend fruit with the dew on it. Let the fruit get its own breakfast before you eat it yourself. It breakfasts on early sunshine and dew. It takes these good things in, and smiles upon itself and the world, just as you do half an hour after a pleasant breakfast. Eat it while it is in this humor,—by no means in the raw and early morning: thus you have the young freshness and virgin flavor of the fruit. It has another character later in the day, when it is filled with sunshine: then I think it is sweeter.—*Chambers's Journal.*

CATALPA. — My way is to lay the seed-pods away in some dry place. Open the pods, and drill the seed early in May in a well-pulverized bed. Cultivate as any other seedling-trees; keep clear of weeds. At any time in one, two, or three years, they are ready for spring transplanting.

Eleven years ago, I put in a few seeds in a garden-bed: two and three years afterwards, I set them out about my premises; and for the past three years they have been blooming. This year, whilst in bloom, they attracted much attention, and were greatly admired. The long pods are now hanging over the trees, some as long as eighteen inches; trees eight or ten inches in diameter, and about fifteen feet high.—*J. D. L., in Prairie Farmer.*

LUDLOW, ILL.

ILLINOIS STATE HORTICULTURAL SOCIETY.

LUCIUS C. FRANCIS ON THE PLUM.

[Reported for "Tilton's Journal of Horticulture and Floral Companion" by O. L. Barler.]

THE Illinois State Horticultural Society has just closed one of the most interesting and instructive meetings ever held by that association.

On the second day, L. C. Francis of Springfield read an interesting paper on the plum. He described three species of plums indigenous to this country: first, the Chickasaw; second, Wild Red or Yellow Plum; third, the Beach, or Sand Plum.

The plum is *propagated* by seed, budding, or grafting.

The trees are fit to *plant* the first or second year from the bud or graft. A moderately rich soil is probably the best; though there are some varieties (the *Diapre Rouge* for one) that will literally bear themselves to death on a rich soil. He thought fifteen feet apart was a proper distance to plant a plum-orchard: though some varieties, like the *Diapre Rouge*, would be better accommodated with eighteen or twenty feet; and others, again, like the Duane's Purple, really need but ten or twelve feet.

The *varieties* which he had grown were the following:—

First, the *Diapre Rouge*. He had fruited it for ten years; finds that it possesses more good qualities than any variety with which he is acquainted, though not as rich a plum as some. It is a prodigious bearer of very large, handsome fruit of good quality. It requires thinning. Is hardy, and grows thriftily upon our rich prairie soil. He procured it of Dr. Kennicott, with high recommendations of its qualities; and has never regretted it.

Duane's Purple is a more showy plum, and brings a higher price in the market. It bears well; but the fruit is apt to rot. It has this advantage,—the tree needs no propping.

The *Imperial Gage* is a sweeter plum than either of the others; tree not so hardy, and needs poorer soil than that on which he has grown it.

Smith's Orleans has not done well.

German Prune has proved tender, but fruit number one for flavor.

Among other varieties, he was particularly pleased with the *Nectarine Yellow Egg*.

He *prunes* but little, and that while young, starting the head three feet from the ground; cultivates the same as for apples. In rich soil, practises sowing oats to check the growth, and bring them into good condition for wintering.

There are but two or three diseases to which the plum is liable; one of which is the *black-wart*, not often met with in the West. The *remedy*: Cut off the affected limbs, and burn them.

The fruit-*rot* is occasionally troublesome. Thinning the fruit so that they may not touch each other is a partial remedy.

Winter-Killing.—The remedy is to check the growth, and ripen up the wood early in the season. Screens of evergreens or deciduous trees would be beneficial.

Insects.—A borer, the same as attacks the peach, is injuring the plum-trees.

It is not named in the books. It has also another enemy in the *trunk-borer*; the same, he thought, that attacks the apple, elm, and maple. The *canker-worm* is nearly as much at home on the plum as on the apple. The caterpillar is frequently found on the plum. The *leaf-roller* also is perfectly at home here. Last, but not least, the *curculio* and *plum-gorger*.

The remedies which have been proposed are whale-oil soap, gas-tar, coal-oil, cotton-batting, common salt, hogs running in the orchard; but, after all, he thought the only reliable plan of fighting the "little Turk" is the *jarring* plan. Knock the rascals down on a sheet, and pinch their heads off. Dr. Hull's *curculio-catcher* is an admirable contrivance for doing this splendidly and effectually.

He concluded by saying, that whoever would be successful in plum-raising must exercise the persevering, unconditional-surrender spirit of our President-elect, and fight it out on this line (the jarring and sheet process), if it takes all summer.

After the reading of the essay, quite a lively discussion took place in regard to plums. N. J. Colman, Dr. Warder, and Dr. Edwards, thought the Chickasaw Plum was not a native of the State of Illinois. To an inquiry made by Dr. Warder concerning the sloe, Dr. Walsh remarked, that "there is no sloe-plum in this country. The sloe is a European variety."

Some inquiries were made concerning the "Miner Plum," to ascertain if it was *curculio*-proof. Dr. Walsh remarked that it was nearly so. He had picked over a large basketful in search of the insect, and failed to find any thing save a single plum that had received a puncture; the insect dying in *very early youth*. It is a cultivated variety of the wild plum.

Mr. Pettingill said that he had received what he supposed to be the Chickasaw Plum twenty-five years ago. He advised against planting it, because of its propensity to sucker. Other gentlemen took part in the discussion, which was quite interesting.

BEEs. — Convinced by the articles at pages 90, 248, &c., of Vol. IV., that the culture of the bee is an important element in the raising of fruit, I have procured several beehives. My confidence in the anticipated result has been greatly shaken by the unqualified statement of an intelligent bee-raiser, that, where you have bees, you cannot succeed with raspberries; and that, whatever may be the effect in the case of apples, pears, cherries, &c., the intermeddling of the bee with the pollen of the raspberry is decidedly injurious, and prevents that fruit from reaching perfection. May I beg that any of your readers having experience in this matter will please communicate their observations?

PHILADELPHIA.

G. G.

[We hope they will do so. The idea is a new one to us. — *Ed.*]

AT Castle Kennedy, Mr. Fowler has this year, owing to the intense sun-heat, placed tissue-paper over his grapes to intervene between the sun's rays and the bunches, so as to prevent sun-stroke. The paper does not affect the coloring, and seems to possess the power of frightening away mice.

THE ILLINOIS HORTICULTURAL SOCIETY. — *Thirteenth Annual Meeting.* The winter-meeting of this very useful association has just been held at the pleasant prairie village of Bunker Hill, in Macoupin County. The location is rather at one side of the State ; but this did not prove to be any disadvantage, as there are many prominent horticulturists in this and the adjoining counties. Those from St. Louis had easy access, and all parts of Illinois are brought near by railroads ; and thus the result was a good attendance : and the character of the men who participated in the discussions was unusually good, even for this society, which is justly famous for the advanced condition of its horticulturists. The exhibition of fruits was meagre, as might have been anticipated from the severity of the weather, but embraced several novelties.

An extensive programme had been prepared, indicating the work that was provided for each session of the four days appropriated to the meeting. This proved of great service in saving time ; and, though it was not always possible to adhere to it rigidly, the business never flagged, nor the interest, from first to last : indeed, the discussions of some of the papers were so prolonged as to crowd out the order for the day.

The address of welcome by T. A. Pettingill, president of the local society, was very appropriate, and offered the hospitalities of the citizens to all who were in attendance. This was followed by a well-considered annual message from the president, A. M. Brown of Villa Ridge, in the southern part of the State, in which he encouraged his brother-horticulturists by telling them what they should learn from the failures of the year. He urged the more thorough culture of their crops. He told them that the object of this society was not merely to instruct the people as to what to plant, and how to plant it, but also how to take care of it after being planted ; how to cultivate ; and how to ward off the attacks of our enemies, particularly the insect foes. The discussions showed the deep interest already taken by the members in these subjects, and the proficiency they have already attained in practical entomology under their excellent teachers, Messrs. Walsh and Riley, the official bug-hunters of Illinois and Missouri respectively, both of whom were in attendance to lend their valuable assistance.

The appointment of an *ad-interim* committee has worked well. To them are referred all questions of interest, and all new or unknown fruits, during the recess between the meetings. They visit localities that are famous for their products ; and their reports to these annual meetings are invaluable. They will constitute a most important portion of the report ; and at the meeting they were not only found exceedingly interesting, but they furnished topics for extended and intelligent discussions. Indeed, most of the numerous papers presented gave evidence of labor in study and research : they showed work. Where all are so good, it would be invidious to particularize. They who wish to know more about them are referred to the published report, which will give a very favorable exhibit of the *status* of horticulture in this great State. The importance of these interests is so well understood and so highly appreciated by the legislature, that a liberal appropriation is made from the State treasury to aid in its support. The annual contribution of one dollar entitles the sender to all the rights of membership, including the printed reports. (Address W. C. Flagg, secretary, Moro, Ill.)

POMOLOGICAL GLEANINGS. — We never had more striking evidence of the influence of an orchard-house over the quality, size, and beauty of fruit, than was afforded by two apples, part of the crop grown at Hamburg in the orchard-house of Mr. Johann Wesselhoeft. One of the apples, the White Calville, is well known as a large and excellent dessert-fruit: but the specimen sent was larger than large; for it measured fourteen inches in circumference, and in every other merit surpassed those we have had from an open wall. The other specimen was of the Melon Apple; and this was the largest we ever saw of the variety, being thirteen inches and a half in circumference, most brilliantly colored, and all that a culinary apple should be, — flesh high flavored, and cooking tender.

A correspondent, "E. M. B. A.," writes to us as follows: "In the interesting account given in the Journal of the Doyenné du Comice Pear, I venture to think that either the writer or the printer of the article in question has fallen into a mistake in accenting the last letter of Doyenné. Turning to Contanseau's French Dictionary, I find as follows: 'Doyen, *s. m.*, 1, dean; 2 (of age), senior. Doyenné, *s. m.*, 1, deanery; 2 (Pear) Doyenné.' The explanation of the latter word rather implies that Doyenné is correct: nevertheless, it seems to me that Doyenne should be regarded as the feminine of Doyen; the word *poire*, which is feminine, being understood. *Comice* is evidently derived from the Latin word *comitium*, 'an assembly:' so that 'Doyenne du Comice' must mean 'Dean of the Assembly;' a title to which, from the account you give, it is justly entitled. It can scarcely be maintained that any one should name a pear 'The Deanery of the Assembly,' instead of the Dean; i.e., the Chief of the Assembly. The one makes excellent sense: the other is little less than rubbish."

[All authorities, French and English, place the accent on the last letter of Doyenné, and, we think, correctly. The first pear so named was raised in the garden of a French deanery, and literally means "the Deanery Pear." Since then, many pears resembling it in some one or more qualities have received the same name, with some affix to mark that they are differing. Thus we have the Doyenné d'Alençon, or Deanery Pear of Alençon; Doyenné d'Automne, or Autumnal Deanery Pear; and full twenty others. Doyenné du Comice, we believe, is the Deanery Pear of the Committee; it having obtained the special approval of the Committee of the Horticultural Society of Angers.]—*English Journal of Horticulture.*

KANSAS STATE HORTICULTURAL SOCIETY. — The Kansas State Horticultural Society met at Leavenworth on the 15th, 16th, and 17th of December, and elected William Tanner, Leavenworth, *president*; C. B. Lines, Wabannsee, *vice-president*; G. C. Brackett, Lawrence, *secretary*; S. T. Kelsey, Ottawa, *treasurer*. A full attendance. Interesting reports, essays, and discussions were made this session, — one of the most pleasing as well as beneficial of any held in our young State.

The interest in this society is rapidly strengthening; and all look forward to its next annual meeting, to be held in Ottawa, Franklin County, as one of great interest and importance in our history.

G. C. BRACKETT, *Secretary.*

HIGH AIMS OF HORTICULTURE. — GRAPES.

A WORD TOUCHING DR. GRANT'S ADDRESS BEFORE THE NEW-YORK-STATE GRAPE-GROWERS' SOCIETY.

My dear Tilton, — Seeing that you have the ear, and, I may add, the sympathy, of nearly every horticulturist in the country, and that in your desire to serve them, and to aid the cause in which they, with you, are embarked, you offer through your excellent Journal a wide range for discussion, I beg leave to submit a few remarks in the line above indicated.

Horticulture is doubtless the most elevated and elevating pursuit known to the civilized world.

In embarking in the culture of fruits and flowers, we approach nearest to the threshold of primeval purity and innocence. Whoever is thereunto inclined (as I rejoice to know thousands of our best and noblest citizens are, and that to every one of them it is a source of purest delight) gives evidence of high moral aims. Kindness and courtesy are the prominent characteristics of their nature.

Hence a combination of such persons, a "horticultural society," or organized body of fruit-growers, has come to be regarded as an association of the highest rank.

These associations, their pleasant and profitable discussions, are very attractive to the fruit-grower; and there are but very few of them of any note who are not members of one or more of the many organizations of this character now permanently established in our country.

To be counted a useful and worthy member of such a society is to possess a passport of the highest character; a substantial guaranty of high bearing, and purity of purpose.

You have chosen these to be your associates and companions, and on their behalf, and for the advancement of the cherished enterprise that combines their sympathies and occupies much of their precious time, have established a much-needed "Journal of Horticulture" of high grade, worthy the name it bears and the interest it proposes to represent. For such substantial benefits, timely tendered, you will continue to receive their highest regards.

In this, my first communication for "Tilton's Journal of Horticulture," I have felt constrained to offer this feeble recognition of your noble efforts in behalf of American horticulture.

To me it is a source of great comfort and satisfaction to be able to realize that grape-culture, after so many years of heroic experimental labors, is at length permanently established in this country. Particularly gratifying, too, is it to know that it has its foundation in vines indigenous to American soil, and that the key to final success was embraced in a proper appreciation of their providentially-provided resource.

Culture, — that's the word. A gracious Providence prepares the needed elements, and sets forth the material upon which our labor and skill are to be expended, suggesting our duty, tempting us to activity.

Of the *Vitis vinifera* we have now little need; none indeed. Why go to Asia for scions, when better, in great numbers, are found all around us?

I do not mean to say that the wild, rough fox, or the frost-ripened fruit of the *Cordifolia*, is to be compared to the Golden Chasselas or the luscious Frontignans; but the products already secured, through *culture*, from these wild vines, furnish the fullest assurance that the most complete success is fairly within our grasp: indeed, there is good reason *now* for asserting that we have already grown one or two varieties, unsurpassed, for wine-purposes at least, by any foreign production.

Again: there is good reason to believe that the Asiatic *Vitus vinifera*, from which all the choice European varieties were produced, had its origin in a type not more exalted than those of our own country already named. Our field of experimental research in the line of improved varieties is wide and promising. The seedlings grown by Mr. Bull and Dr. Grant; the crossing of American with foreign varieties, as seen in the instance of Allen's Hybrid, and the best samples presented by Mr. Rogers; to say nothing of Mr. Moore's Diana Hamburg, or Mr. Caywood's much-abused Walter, or of those many accidental seedlings that have sprung up by the wayside, and are yet to be a thousand times duplicated in the same field. — I say, when we take account of these, and of the lessons they teach, we are warranted in the assumption, not only that grape and wine culture is at length permanently established, but that it will be rapidly expanded, until the product, in quantity as well as quality, shall equal that of any if not of all other countries.

At present, the public judgment is not a little confused regarding the relative merits of varieties already in cultivation. This is the natural result of the rapidly-multiplying new sorts that are constantly being brought before the public; and these differences, which are seen to be natural enough, bid fair to continue for a long time, especially as local causes are seen to exalt or depress, as the case may be, all the varieties that have as yet been at all widely cultivated. And again, and, too, what may also be counted not strange, perhaps, though a little out of place in horticultural ranks, the spirit of speculation has been encouraged, and manifestly is still being fostered, as having a tendency to hedge up the way to a fair investigation and development of the actual qualities, in fruit and vine, of some of the *to be* distributed and *tested* late productions *claimed*, but scarcely yet *proved*, to be of high quality.

Now, sir, it is not my habit to discuss men; but I insist on the widest latitude and freest scope in the discussion of any and all varieties of *grapes* new or long tried.

Also, in view of my own experience during the past twenty-three years, for the largest portion of which period my time and attention have been almost exclusively occupied with this enterprise, I feel entirely at liberty freely to advise all who inquire of me regarding the practicability of their investing considerable sums in any given variety, and especially of such as have had but a limited trial.

The propagators and venders of new grapes should not allow themselves to be over-sensitive regarding the free expression of opinions in which fruit-growers, and especially grape-growers, claim the right to indulge.

When I advised the grape-growers of our Lake Shore not to purchase more

than two plants each of Dr. Grant's famous seedling, the Iona, I did so because I regarded the investment in the light of a lottery-ticket. For indeed they were such; and so are all new seedlings: all are but *tickets* in the great horticultural lottery; and too, I am fully warranted in declaring, *less likely to draw prizes than blanks*.

In the instance of the Iona, we all, along "this line" at least, drew prizes.

Before the trial and eminent success of the Iona, Dr. Grant seemed to regard me as arbitrary and hardly fair; but afterwards, when I became well satisfied of the great value of this variety, and invested ten thousand dollars in vines for my own vineyards, the doctor evidently approved my course, and doubtless has since held me in higher estimation than he would have done had I at first "gone in" after the manner of "shut your eyes, and open your mouth."

As Dr. Grant might have anticipated, his address before the grape-growers at Canandaigua gave rise to considerable muttering, which, as it appears from a communication in your Journal, has at length culminated in open complaint. Charges, it seems, have been preferred as well against the doctor personally as against his cherished seedlings, one at least of which he has always regarded as tenderly as the "apple of his eye."

As to the *matter* embraced in the doctor's address, or the propriety of his presenting the facts and opinions there set forth in response to the invitation received from the president of the organization, the doctor, who was most interested of course, was doubtless well satisfied before it was offered; and it is but fair and most natural that each individual grape-grower or propagator should indulge the same freedom of opinion.

To the writer, it seemed proper then, as it does still, and especially at the first exhibition of the society, to review the past history of grape-culture in our country, and to note the successive advances made by those earnest and faithful cultivators who have preceded us, as well as to relate what has been accomplished by the more fortunate experimenters of the present day, who, profiting by past experiments, have ushered in the "new era," and have fully succeeded in making grape-culture in this country a permanent institution.

Manifestly the important feature of such a review would consist of a faithful narrative and history of the succession of new and improved varieties, which is the sum of our accomplishments, and, together with the knowledge gained with these acquisitions,—to wit, the manner in which they were obtained,—constitutes all the capital we can fairly claim to have invested in the grand achievement.

But such a faithful representation Mr. Caywood claims the doctor failed to present, grievously erring in favor of his own bantlings.

This is a delicate point, and is withal a grave charge, and, I do not hesitate to add, one which, judging from Mr. Caywood's antecedents, as well as from his performance in drawing this bill of indictment against the doctor, he is illly qualified to establish. And, further, I am constrained to remark, that Mr. Caywood's article scarcely exhibits the characteristic refinement and courtesy I have already claimed to belong to professional horticulturists and fruit-growers.

It is to be borne in mind that the doctor's performance was one of a public

character, and that it involved his credit and reputation as a grape-grower, — points on which it is well known he values himself more than in all things else, and which he is doubtless prepared to defend, to his own satisfaction at least.

So far as my knowledge extends, my views are mainly in harmony with those expressed by Dr. Grant. His criticisms upon varieties, his well-considered and nicely-drawn formulas, it is scarcely prudent for persons of limited attainments in this delicate and intricate work to attempt to improve.

With the great merit of the Iona Grape I was early impressed, and each succeeding year has added new proof of its paramount value. It is, beyond all question, in quality, the finest grape yet grown; and, where it succeeds (limits less narrow, I am confident, than many have supposed), it is bound to take the lead of all others until a better variety (and may it soon appear!) is brought out.

The grape-growers who met at Canandaigua, as well as others in different sections of the country, are bearing renewed testimony of their appreciation of this splendid grape; nor will their zeal abate on account of the views expressed in Mr. Caywood's communication. Mark the prediction: every well-developed Iona plant offered will be purchased and planted the coming spring; and the same result will be realized the following year, unless more than three times the number propagated the past season are thrown upon the market.

I cannot indorse Dr. Grant's views regarding the hybrids grown by Mr. Rogers.

So far as the value of the grapes is concerned, it is of no importance whether they are crosses, yea or nay: their inherent properties constitute the measure of their value. Nor, in my view, does their claimed affinity to a foreign family add any thing to their *merited* fame in the opinion of intelligent cultivators.

For the interest of grape-growers, it would be a great satisfaction to be assured that Dr. Grant is right; for if the results secured by Mr. Rogers in the instance of his fifty varieties, all eatable, if not particularly desirable, are available without hybridization, then assuredly may we look for new and valuable varieties in abundance.

This point settled in accordance with Dr. Grant's view, the day of five-dollar grape-vines, however exalted their fruits, is numbered; and the strife regarding the relative merits of new varieties will at once cease for lack of the needed stimulus, — the fancy prices heretofore so readily obtained. But certainly the fact that No. 4 or 15, or their more admired sister Salem, are hybrids, adds *not a whit* to their *actual* goodness.

“The rose by any other name would smell as sweet.”

Nor is it of any consequence whether the Iona and Israella (and the six or seven less desirable sorts produced from the same planting of seed, all of them, in my opinion, better than the Walter, though none of them have been “sent out”) were grown under a trellis, from the cast-off seed of the Catawba, as Mr. Caywood asserts. Dr. Grant told him they were, or in the manner they are well known to have been, — from seed carefully selected, and grown with nice attention.

It is to be regretted that this wrangling spirit has found a lodgement in the sanctified field of horticulture. However, it is a satisfaction to know, that, in a soil so uncongenial to its expansion and thrift, it may readily be eradicated. In conclusion, I will only add, that, for one, I desire to take no part in the disputes arising between propagators, further than to canvass their views, and examine the evidences upon which their opinions of the merit or demerit of the candidate under inspection are founded. And yet I deem it but fair to state that a large majority of the grape-growers of this country regard Dr. Grant as one of the most earnest and intelligent workers in their ranks; and that, from their verdict, it would also appear that he has done more for the advancement of grape-culture in our country than any other. And I desire further to state, that, however he may be prejudiced in favor of his own seedlings, I regard him as the best "taster" and the most competent judge of the relative merit and value of the different varieties of grapes, of all the cultivators with whom I am acquainted.

I do not make these remarks to exalt Dr. Grant, or to rescue his character, personal or professional, from the attack of Mr. Caywood; for it is manifest that in neither has he suffered any considerable damage.

W. G.

NORTH EAST, PENN.

THE WINTER-DRESSING OF ASPARAGUS-BEDS. — I never could quite understand why gardeners in private establishments, and those who have the management of market-gardens, should so widely differ in their practice of the winter-dressing of asparagus-beds. The former generally, either late in the autumn or at the commencement of the winter months, wheels on to his beds a quantity of decayed manure, which is thickly spread over the whole surface: he then begins to square them by digging from the alleys or trenches between the beds a quantity of soil, by which he makes the sides firm, with an even slope towards the bottom of the trench. The loose soil is strewn over the dung on the top of the bed. When the sides are finished, the trenches between the beds are filled with plenty of rotten manure, into which, in the growing season, the roots of the asparagus find their way. Early in the spring, the beds are lightly forked, a portion of the soil going towards filling up the alleys: thus, in some degree, the beds are lowered. With the market-gardener the practice is different. He makes good the sides of his beds in the spring; and, instead of reducing the quantity of soil, he adds to the top of his beds: thus their depth is increased. The only *rationale* I could ever arrive at respecting the opposite systems of culture was, that the market-gardener, in order to obtain the asparagus in a fit state for the market, must have each stalk of a certain length, otherwise he cannot tie them into salable bundles: therefore it is essential that there should be an extension of its growth under the ground; because, when it reaches a few inches above the surface of the soil, it must be cut, or the heads would soon become unfit for table. With a gardener in a private establishment, the length of stalk is not of so much consequence, because they are sent to the kitchen in a loose state; and therefore a very little more than the length of the salable portion is required for that purpose. — *Gardener's Magazine*.

HOW TO GROW LILY OF THE VALLEY IN POTS.—Plant the crowns in good rich sandy loam in February or March, tying about six or eight of them together, so as to keep them compact, in order that they may go into the pots without disturbing the roots or the soil much. Water them occasionally through the spring and summer with weak liquid manure, taking great care to give enough at a time to reach the lower roots.

When the leaves decay in autumn, they may be potted, and plunged in coal-ashes, until required; or they may be potted as they are wanted to be placed in heat. The plants may be had in flower at Christmas; but the leaves will not come freely until the third week in January. I always place mine on the shelves in the different houses; and they get no more attention than a drop of water as they require it.

The main point in their cultivation is good summer treatment. They must have well-trenched, rich soil; and must be supplied with abundance of water while growing. One or more patches may be put in a pot, in which they should be set as closely as they can be got together.

The *Convallaria majalis variegata* is a very useful variety, on account of its golden-striped foliage, which is ornamental as well as its flowers. — *W. H., in Gardener's Chronicle.*

LARGE PROFITS IN STRAWBERRY-CULTURE.—At a recent meeting of the Western fruit-growers, held in Cincinnati, O., Capt. Anderson, who is largely engaged in the cultivation of strawberries for market, stated that he had raised as high as seven thousand quarts to the acre; that, under some circumstances, he had averaged one quart to the plant; and that they would realize from \$2,000 to \$2,500 per acre. He farmed in the stool system, and planted two feet apart each way. — *Rural American.*

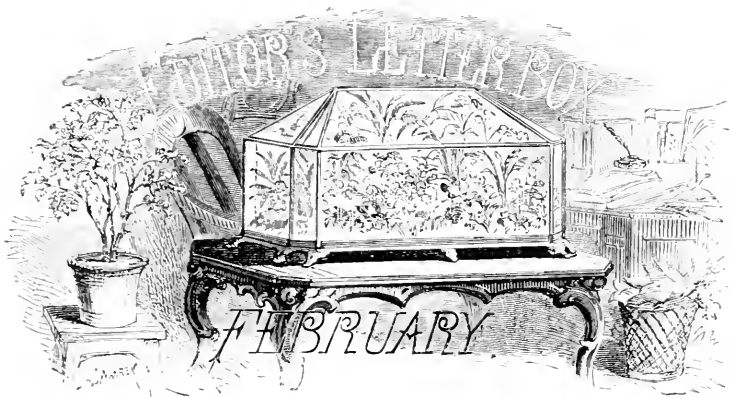
[One of our dreams is, that, when we can see our way clear, we shall set out an exact acre, neither more nor less, of good land, with some productive kind of strawberry planted in hills, mulched and well-cared for, and then keep an accurate account of the product.

We have results enough to quote from garden-beds and small patches; but we are ambitious to raise with our own hands, and see with our own eyes, the maximum crop that can be got from *one* acre by high cultivation, trimming the runners, and deep mulching. — *Ed.*]

HORTICULTURE IN WEST VIRGINIA.—On the 26th of December, a horticultural society was inaugurated at Wheeling, West Virginia, under very favorable auspices. It is to be known as the "Eastern Ohio and North-west Virginia Vine-growing and Horticultural Association." Thomas Hornbrook, an intelligent and enterprising horticulturist, is president; and Lewis Baker of Elm-Ford Fruit-Farm, secretary. At the meeting on the 26th, fine specimens of grapes and apples were exhibited; and samples of wine of the vintages of 1856, 1867, and 1868, from the Catawba, Isabella, Ives's Seedling, Delaware, Creveling, and Concord, were presented and tested. Over a thousand acres of vines were represented at this meeting.

THE CLARKE RASPBERRY. — Henry Thacker, the horticulturist of the Wallingford (Conn.) Community, having seen a quarter-acre field of the Clarke Raspberry alongside of Franconia, says, "The contrast was very striking. While the foliage of the Franconia was suffering severely by the heat and the dry weather, the Clarke was looking remarkably fresh and healthy, and thoroughly loaded with handsome, perfect berries. The two varieties, I was told, are treated alike in cultivation, with the exception that the Franconia is laid down and covered during winter, and the Clarke is not. Three important points in the Clarke Raspberry may be considered as pretty well established; viz., the hardiness, productiveness, and uniformly fine flavor of its fruit. Mr. Augur was selling the Clarke berries for fifty cents a quart in the New-Haven market, Franconia at forty cents, and Doolittle Blackcap at twenty-five cents." — *Ohio Farmer*.

IOWA STATE HORTICULTURAL SOCIETY. — *Officers elected for 1869.* — Capt. James Matthews, president, Knoxville; Suel Foster, vice-president, Muscatine; D. W. Adams, secretary, Wauken; David Leonard, treasurer, Burlington.



THE Editors of "Tilton's Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

J. G., Amherst, Mass.— Having heard a great deal about the Rose Potato, I wish to ask if it is as good for the table as the Goodrich Early, Harrison, and Garnet Chili. Is it free from the potato-rot? Does it yield so much more than other varieties as to make it worth so much as they ask for it? Is it as early as has been claimed? — It is a good table-potato, — far better with us the past season than either of the sorts named. It was generally free from rot, ex-

cept when highly forced or planted late. We have never seen a decayed specimen among those we raised on a dry soil. It yields largely: we know of none that gives a better. Whether it is worth while for every farmer to pay the present price for it, we cannot say; but will say, that, if we had not got it, we should pay even a higher price, rather than not have it. It is early. We planted the Early Rose, Goodrich Early, Harrison, Orono, and Vanderveer's Seedling, side by side, the same day, all having the same treatment; and the stalks of the Early Rose were three inches high before either of the others showed their noses. They ripened much earlier than either of the others. The Goodrich Early is almost a late variety compared with the Rose.

ORCHARDIST, Conn. — How can I best start quince-cuttings? What is the best variety? I have concluded to set out a lot of bushes to raise fruit for the market. — The quince strikes quite freely. Let the cuttings be about ten or twelve inches long, and put them down two-thirds of their length into the ground. Let the soil be moist (not wet), and well prepared. It may be enriched, but not with dressing that will heat. Treat them pretty much as you would currant-cuttings. The apple-quince is by far the best. It is tenderer when cooked than any other.

G. C., New Haven, Conn. — What dressing shall I use on my lawn? — Ashes is the best thing, if you have not got very fine stable-manure. There are some advantages in using a manure that does not have mixed with it more or less weed-seed. Superphosphate and guano are good, but rather expensive; though we should not advise the constant use of the latter.

FRUIT-GROWER, Providence, R.I. — What is the best season of the year for cutting scions? When shall I graft my cherry-trees? Should pear-trees be grafted as early as the cherry? Is there a better way than cleft-grafting? — You can cut your scions any time; now; the sooner the better, if you take good care of them after they are cut: keep them in a damp place away from the frost. Graft your cherry-trees in March. They do much better when grafted early. Pear-trees will bear to be grafted later; though we like to graft pears rather early, say in April. No better way than cleft-grafting for large stocks: for small trees, we should prefer splice or whip grafting.

NOVICE, Bloomington, Ill. — In my garden are several pear-trees that I purchased of a peddler a few years ago: and they are constantly throwing up sprouts, or suckers. What is the cause of it? What shall I do with them? — They are probably worked on sucker-stocks; that is, the stocks on which they were budded or grafted were themselves suckers. Sometimes seedling-trees will do this, especially when the roots are cut or broken off. Trees that sucker up badly are a nuisance in one's grounds. We have dug up a few that were inclined that way, preferring to lose them altogether rather than be annoyed by the suckers. Such trees never seem to bear so much or so good fruit; for they exhaust themselves to some extent in throwing up these shoots.

J. G. G., Kingston, N.Y. — Can plants of the Hovey's Seedling Strawberry be obtained? If so, where? I want none unless warranted true to name; for I have bought plants several times for the Hovey when there was not a single plant of that variety among them. — We are sorry our friend has been so unfortunate in his purchases. The true Hovey's Seedling-plants can be had. It is more difficult to procure them than it is to get plants of most any other sort. If you would consult our advertising pages, we think you would have no difficulty in deciding where to buy. If all other sources fail, the originator, we presume, could furnish them.

GARDENER, Germantown, Penn. — A few years ago, I set out about twenty dwarf apple-trees worked on the Paradise stock, expecting to get fruit from them in a short time; but in this I have been disappointed. They have grown very vigorously, but have given little fruit. They are six to eight feet high. What shall I do with them to bring them into bearing? — They make so much growth, that they cannot bear; check their growth, and they will at once show fruit. Sow the land to grass; stop manuring, or pinch in the new growth in midsummer, and so force them to make fruit-buds.

BEGINNER, Lockport, N.Y. — What one variety of grape would you recommend, all things considered? what one variety of strawberry to plant for market-purposes? what variety of currant? — For the one grape, the Concord; for the one strawberry, the Wilson; for the currant, the La Versailles.

X. X., Geneva, N.Y. — Which are preferable for planting, — fully ripe, or unripe potatoes? — *We* should prefer those not fully ripe, of fair size. We think they would throw more vigorous sprouts than those fully or over-ripe. We should like to have some of our many readers give us their views on this question.

W. M., Kansas. — I wish to inquire if any of the readers of the Journal have ever observed the seedless persimmon? I found an isolated grove of those trees in this county, bearing large crops of fine, luscious fruit almost entirely without seed. *Occasionally* one seed may be found in a specimen; never more. It is a *new* thing to me, and I wish to know if others have observed a like phenomenon. — We think the persimmon is occasionally found without seeds, and conclude that the case cited above is not an isolated one. In looking over our exchanges, we find the following, which we clip from "The Horticultural Recorder." It is part of a letter written by D. Redmond of Arcola, La. "I send a few grafts of a seedless persimmon-tree, which I discovered in Columbia County, Ga. The fruit of this tree may be called seedless; for, in cutting a large number, I found only one or two seeds in five or six of the fruit; the 'seedless' specimens showing only the slightest rudiments of seeds in the form of a pulp a little thicker and less melting than the other portion of the fruit, which ripens gradually on the tree from the middle of September until frost, and does not require the ameliorating influence of old 'Jack' to render it palatable." We see no reason why this fruit may not be well worthy of cultivation.

JUNIPER, Pittsburg. — Next spring, I intend to transplant some large evergreens; and I wish to have your opinion as to whether I shall do it in April, May, or June. As I find there is a difference among those who profess to be wise on this subject, I am at loss what to do. — We say, Transplant evergreen-trees in the spring, just when you would deciduous trees, before they start much. They will live if set later; but our experience justifies us in recommending May as the best time of the year, and early in that month.

NEWTON, Mass. — Will it improve my lawn to give it a good dressing of muck? — That depends somewhat upon what kind of muck it is, and how long it has been dug, and exposed to the weather. We should say it would be very injurious to it to cart on muck fresh from the meadow or swamp. Muck should not be used in a fresh state. We should prefer to use other substances, and use the muck in the compost-heap after it has lain long enough to get out the acid it contains. It is a good plan to sweeten it up with lime.

VINIST, Cincinnati, O. — Can you not give your readers more information concerning the new grapes said to have been originated by Mr. Bull, who sent out the Concord? Are they black, or white? Are they hardy like the Concord? Are they earlier or later than that popular sort? Are they table, or wine grapes? — We can say but little about Mr. Bull's new grapes. We had the pleasure of tasting the fruit of three or four, some black, and others white; and we were pleased with them. He has several of both colors. They are said to be hardy. The Una and Cottage, vines of which were sent out last spring, resemble, in vigor, color, and health of foliage, the Concord, from which we think they were produced. Said to be earlier than the Concord. A trial will determine whether they are good for wine-purposes. We hope Mr. Bull will give us some facts concerning these new seedlings of his.

INQUIRY. — In the November number of this Journal, Mr. Dunlap says in his article, "Progress at the West," "Grape-culture is rapidly extending. The spiral system of training is simplifying and reducing the cost of culture; making the vines more vigorous, and largely increasing the crop."

Will he or some other correspondent give us a detailed description of this system of training, for which is claimed so many advantages? And if you, Mr. Editor, will call in the aid of your artist, and give some illustrations, so much the better.



SOUTHERN HORTICULTURAL TRIP.

THE condition of horticultural art and science in the Southern States of the Union is, perhaps, less accurately known to many of your readers than that of England, France, and other European countries. With a view to supply in part this deficiency, and also with the anxious desire to "seek the lost and build the old waste places," and thus to aid in bringing together again old friends who have been separated during the late crisis of our country, a party of horticulturists, consisting of P. Barry, George Ellwanger of Rochester, N.Y., Robert Manning of Salem, Mass., and myself, recently made a rapid tour through the chief seaboard cities of the South as far as Jacksonville, Fla. We returned by the way of Augusta and Atlanta, Ga., Nashville, Tenn., Louisville, Ky., and Cincinnati, O. A few of the most important observations made are noted below, embracing some memoranda of those trees and plants of extraordinary size which are not hardy in our Northern States.

The pride of the South, the *Magnolia grandiflora*, was first seen at Baltimore, Md., and Washington, D.C. ; but the injury which some of the trees

had received from frost indicated this as the northern limit of this magnificent tree. The same thing was noticed at Louisville, Ky. Besides the magnolias, we saw in Lafayette Square, Washington, beautiful hollies, both European and American, and some good Deodar cedars. We visited the Government greenhouses, where is now building and nearly completed a lofty, magnificent circular conservatory with capacious wings. Under the courteous guidance of Mr. Schmidt, we were shown the collection of plants, both under glass and in the gardens; all of which appeared to be in good condition. There are many of the new and popular trees, shrubs, and plants. Among these we noticed a beautiful new large species of saxifrage and a *Yucca angustifolia*, the latter from Kansas, both of which will probably prove hardy at Boston. Our attention was also called to a fine specimen, in the Capitol grounds, of that rare and symmetrical tree, *Ostrya vulgaris*.

At the department of agriculture, the commissioner, Hon. Horace Capron, is most zealously and prosperously at work; every thing assuming the appearance of system, enterprise, and usefulness. Here, too, we found our old friends William Saunders and Townsend Glover, both energetically engaged within their departments, determined to do all in their power to make their specialities an honor to our nation.

The propagating, experimental, and all the other grounds, are under the skilful management of that veteran superintendent and director, William Saunders, who has the sole responsibility of planting the new arboretum, which is to contain two specimens at least of all the trees, shrubs, &c., of our own or other countries, that will endure the climate of Washington. Mr. Saunders has already laid out the grounds for this purpose most judiciously, with broad, substantial avenues through the whole forty acres. The work of planting and filling up according to his design is to be pushed forward vigorously this spring; and I have no doubt, if his life be spared to prosecute and carry out his plans, they will redound to the honor and usefulness of the department.

Mr. Glover has particularly under his charge the cabinets of fruits, insects, seeds, &c. All who have seen his beautiful models and illustrations will feel that no one is more competent for the service assigned than himself.

The soil of the experimental garden seemed to be remarkably well adapted to the pear; some beautiful trees of which, for size and early productiveness, were equal to the trees of California. In the vineyard, where

are specimens of all the known varieties of the grape on trial, we noticed the copings on the top of the trellises, which Mr. Saunders considers a preventive to mildew.

At Richmond we had only time to call on Mr. Williams and Col. Frank C. Ruffin, editors of "The Southern Planter and Farmer," an ably-managed paper. The colonel is widely and favorably known in the agricultural world: and we were earnestly entreated by him to attend the meeting of the State Agricultural Society that evening, now to be reinstated on its former popular foundation; but time did not permit.

At Wilmington, N.C., we were most hospitably received by Mr. Edward Kidder and his partner Mr. Martin. In the garden of Mr. Kidder, in the open ground, we saw a Cape jessamine seven feet high, spreading eight feet, and stem six inches thick. The laurustinus, camellias, and roses were coming into bloom. *Olea fragrans*, *Nerium splendens*, *Mespilus Japonica*, *Metrosideros*, and hedges of *Pittosporum* and *Euonymus Japonica*, were standing nobly out doors. Violets were in bloom without any protection, and mignonette with only a box placed over it. In the greenhouse were *Poinsettia pulcherrima* and *Russelia juncea*, each ten feet high, planted in the ground.

In the garden of Mr. Lippitt we saw a *Pittosporum* ten feet high, with head twelve feet spread, and stem ten inches thick; *Euonymus Japonica* twelve feet high, head eight feet spread, stem twelve inches thick; white fig twenty-five feet high, top thirty feet spread; stem sixteen inches thick; a Scuppernong grape-vine thirty-five years old, with two stems six and seven inches thick; a camellia ten feet high and seven feet spread. In Mr. Martin's garden was a Cloth-of-Gold rose fifteen feet high; and in an adjoining garden a *Magnolia grandiflora* thirty feet high, twenty-five feet spread, with two stems, each fifteen inches thick, supposed to be fifty or sixty years old. At Wilmington, also, we first noticed the water and willow oaks, both evergreen. But the most remarkable production of this region is the Scuppernong grape, which, in the sandy and apparently barren soil which prevails in the coast region from the northern limit of North Carolina to the extremity of Florida, finds abundant nutriment, and from Wilmington to Savannah grows to the enormous size mentioned above, and even larger. It is trained on strong horizontal trellises or arbors raised to a con-

venient height for picking from beneath ; and single vines sometimes cover a quarter of an acre of ground, and produce from fifty to seventy bushels of fruit. The young shoots would not be recognized by one unacquainted with it as belonging to a grape-vine, but resemble much more strongly those of the Chinese wistaria. In the middle of January, we were, of course, unable to test the fruit ; but the sparkling wine kindly presented us by L. A. Hart, Esq., made from this grape at his vineyard, without any addition of spirit, we found of fine quality as a champagne. He also gave us wines of the Flowers and Thomas grapes, sub-varieties of the Scuppernong, which promise to be of good quality. The wine of the Bullace wild grape of the wood has not been appreciated as much as it deserves.

On our arrival at Charleston, S.C., Jan. 15, our first inquiry was how we could arrange to visit the newly-discovered phosphate-beds, which are expected to be of untold value to the Southern planter. Fortunately we met Mr. Moses, a former acquaintance, who is agent for one of the companies engaged in developing these resources ; and the next day he took us eighteen miles up the Cooper River, where about forty negroes were at work in throwing out and cleaning the nodules. These deposits are attracting the attention of capitalists, and several companies are working them. One Philadelphia company purchased and leased twenty thousand acres, thinking to secure the control of the business ; but the deposits are so extensive, that their tract scarcely makes an impression upon it. Three large manufacturing establishments are now in successful operation in Charleston, finding an ample market in the cotton States ; and several thousand freedmen find labor in the trenches, paid by the ton for excavating. Large quantities are also sent North and to Europe. This valuable material has been traced from its outcrop on the Ashley River, across the Cooper River on the north, and beyond the Ashepoo on the south ; while the physical indications are that it is not limited even to this wide field. The region is said to be entirely free from stones, and every thing harder than the soil itself is a part of the valuable deposit ; so that a simple washing suffices for the rejection of all worthless material. It is estimated, that, making due allowance for the earth that fills the interstices between the nodules and their imperforations, there are probably more than a thousand tons of the phosphate to each acre that it underlies. The larger part

of the material now excavated is said to contain from fifty to sixty per cent of true phosphate of lime.

These phosphates lie in beds at an average of about a foot and a half below the surface, though some extend to four or six feet in depth. This stratum is from twelve to eighteen inches thick, and the nodules are from a few inches to a foot in length. Among these are frequently found shells and the bones of sharks and other fishes. Of the former we brought home a large joint of the backbone, and also a tooth which measures six inches broad by six long.

By the politeness of Professors Shepard, senior and junior, we visited the Wando Mills, engaged in the manufacture of this phosphate. The nodules are crushed, and ground to powder; and of this, twelve hundred pounds, with four hundred of dried meat, and the same quantity of sulphuric acid, are placed in a revolving basin; and, when thoroughly mixed, it is dropped down to the next story, and put up in bags for market. The demand at this mill, we were told, was ahead of the production. Price sixty dollars per ton.

At Charleston we called at the garden of Mr. Jennings, formerly the Lucas Place, which the writer had visited fifteen years ago. Here we saw the same old camellia-tree, of the single red species, twenty feet high, twenty-five feet spread, and fifteen inches thick in the stem, and which in a single season, it was said, has produced eight or ten thousand flowers. Besides this, we saw many other large camellia-trees, such as Lady Hume, double white, and *imbricata*, in bloom, and a *Lagerstromia Indica*, or Crape myrtle, whose trunk was more than a foot and a half in diameter and twenty feet high, having been cut down from probably about thirty feet. Passing along the street, we noticed a *Magnolia grandiflora* fifty feet high, thirty-five feet spread, with stem eighteen inches thick; and near the battery the Spanish bayonet-plant (*Yucca gloriosa*), whose stem was ten inches in diameter, and some of its arms more than twenty feet long.

As we approach Charleston from the north, the *Pinus longiflora* (long-leaved pine) first makes its appearance in the forest; the young trees of which, with their bright green leaves, nearly a foot in length, are so beautiful, that they have been cultivated in greenhouses at the North in pots.

Savannah, Jan. 19. — It was our good fortune when we arrived here to meet our old and excellent friend Hon. William Schley, who took us in

charge, and extended to us every courtesy that could be desired. We first visited Dr. Parsons's place, about six miles from the city, famous in Revolutionary times as Jasper's Springs, now occupied by Mr. Brown. Here we found a large pear-orchard in good condition ; the varieties being chiefly Duchesse d'Angoulême, Seckel, and Bartlett, — mostly the last. The pears come into market the middle of August, and bring sixteen dollars per bushel in Northern cities. Here, too, were early strawberries, planted in the interstices of the brick lining to a ditch. The latter was about three feet deep, and four feet wide at the top ; the sides sloping to a width of a foot at the bottom. At the date above mentioned, the strawberries were in bloom, with some green fruit ; but we did not learn how much this process had hastened the ripening. The earliest strawberries command three dollars per quart. In this garden was a Scuppernong grape-vine, whose stem is six inches in diameter, covering a trellis forty feet square, which, in the damp, hot atmosphere, had sent out multitudes of aerial roots, some of which were four feet in length, frequently taking root in the ground. In the ornamental grounds were an arbor of Solfaterre and Chromatella roses : the stem of the latter was four inches in diameter, and covered a large space.

But what astonished us much were two splendid specimens of that rare evergreen, the funereal cypress (*Cupressus funebris*), thirty feet high, with heads of gracefully-drooping branches twenty feet broad. Here, too, were *Cupressus Lawsoniana*, fifteen feet high, stem ten inches in diameter ; *Taxodium sempervirens*, twenty feet high ; *Thuja aurca*, — a most beautiful tree, seven feet high and four feet broad, the leaves in compact laminæ, radiating from the centre ; laurustinuses and Cape jessamines ; and a double white camellia in bloom, from which nearly a hundred dollars' worth of flowers had already been sold this season at twenty-five cents each.

The judge next took us to the McAlpine Plantation, with which family he is connected. The avenue leading from the road to the house is a mile long, and lined throughout with noble live-oak trees, in the rear of which, in straight lines, are a hundred neat brick negro tenements, most of which are not occupied.

After receiving the hospitality of the proprietors of the mansion, we were treated to oranges picked from the chamber-window ; the tree being more than twenty feet in height, and full of magnificent fruit. In the

grounds we saw two remarkable trees, twenty-five feet high, of *Cryptomeria Japonica*, which, with one exception, were larger than any we saw in Europe. Here also were camellias, Spanish broom, *Mespilus Japonica*, and *Olea fragrans*, in bloom, fine specimens of *Thuja aurea*, and *Calycanthus* eight feet high.

At Mrs. Col. Marshall's garden, in the city of Savannah, there are more than fifty camellias, some quite large. Many were in bloom, among which we noted *C. Lady Hume*, *C. candidissima*, *C. Douckelaerii*, *C. double white*, *C. myrtifolia*, *C. imbricata*. A fine group of bananas, twelve feet high, with stems eight inches thick, had been injured by frost; but the gardener assured us that they would start again from the roots. Here were also a Cloth-of-Gold rose, with stem eight inches in diameter; and a fine *Maréchal Niel*, with stem four inches in diameter. The jonquils and violets were also in bloom.

A drive through "Bonaventure" was of great interest. The long avenues of magnificent live-oak trees, draped with the long, waving Spanish moss, were indescribably beautiful, but so entirely unlike any thing known here, that it would be vain to attempt to convey an idea of them to one who has not seen them.

On our arrival at Jacksonville, Fla., Jan. 22, we were received at the St. James Hotel by our old friend Capt. C. B. Wilder, by whose enterprise this splendid new and capacious hotel has been erected. Here, too, is now building a very large schoolhouse, nearly as large as any in Boston. Business is on the *qui vive*: numerous houses are going up, and there is great speculation in real estate; houses which cost twenty-five hundred dollars renting for six or seven hundred dollars per year. Mr. John M. Forbes of Boston has purchased a mile square on the banks of the St. John's River, adjoining the city, and is now laying it out in house-lots.

While walking through the streets, we saw an oleander (*Nerium splendens*) which had reached the height of twenty-three feet, with four stems, the largest of which was four inches in diameter; also a prickly-pear (*Cactus opuntia*), spreading over a circle of eight feet in diameter; and a large palmetto (*Chamærops palmetto*) on the sidewalk, twenty inches thick at the ground. The American aloe and cocoa-palm were also seen in the open ground.

It was our intention to visit the orange-groves up the river, and the

large magnolia-trees, some of which, we were told, are sixty or seventy feet in height. The orange-trees, although much injured in their foliage by the severe weather of December, were putting forth their new wood. At Jacksonville we called on our old friend Solon Robinson, who has built a fine house, and retired here to rest on the laurels of a long and active life. We made a visit to the nurseries of Col. Hardee, a true representative of Southern chivalry and patriotism. The colonel, in the space of three years, with the help of three colored men, built his house, and cleared thirty acres of land, and has much of it already planted with trees and vines. He showed us quince-trees a year old from cuttings which were four feet, and grape-vines of the same age fifteen feet, in length. To provide against the injurious effects of hot summer suns, he has adopted the plan of planting a grape-vine with a peach-tree for its trellis, which he calls *the green trellis*.

Jan. 25, at Fruitlands, four miles from Augusta, we visited the nursery of our good friend Prosper J. Berckmans, Esq., whose house is reached through a beautiful avenue of young magnolias, in front of which was planted profusely the Cape jessamine (*Gardenia florita*): and, while dining at his bountifully-spread board, we saw on the lawn an *Acacia dealbata*, two years old, stem four inches in diameter, fourteen feet in height, and spreading twelve feet; also a large American aloe (*Agave Americana*), and a Deodar cedar six years old, fifteen feet high.

We were shown many fine trees of extraordinary growth, and among them *Libocedrus decurrens*, six years old, fifteen feet high, stem ten inches in diameter; several new magnolias, one of which, *Magnolia grandiflora*, var. *gloriosa*, bears a flower fifteen inches in diameter. *Magnolia fuscata* proves hardy. We were shown a fine young cork-oak (*Quercus suber*), which is perfectly hardy here; but at Atlanta we found it had proved tender in the garden of Richard Peters, Esq. Other plants noted were *Cistus algarvensis*; *Azalea Americana*, growing on the lawn; *Gardenia radicans*; pampas-grass, a clump of which has produced two hundred flower-stalks; *Ligustrum Californica* and *L. Amourensis*; *Pyrus Japonica*, which, at the time of our visit, was just coming into bloom; *Centurens*, which are perfectly hardy here; and a yellow Banksian rose four inches in diameter in the stem.

In the fruit department, Mr. Berckmans finds the Beurré Giffard one of the best early pears, ripening May 20. The Bartlett is the best pear: it

ripens the middle of July. Duchesse d'Angoulême ripens the middle of August, and is one of the most valuable. Seckel is very fine, and three times the size of the Northern; while Louise Bonne de Jersey is entirely worthless. Triomphe de Jodoigne is of the finest quality. Gros Colmar Van Mons keeps over until May. The long seasons and high temperatures cause many changes in the routine of cultivation from that adopted in Northern nurseries; among which we may mention that Mr. Berckmans buds his pear and other stocks, heads them down, and obtains a considerable growth in a single season. Here, also, we saw seventy or eighty thousand rose cuttings and layers, put out last fall, which will attain the height of a foot to two feet this year, and be fit for sale; and so readily are these produced, that of the new rose *Maréchal Niel* he has now eight thousand plants for sale.

Mr. Berckmans' nursery, and every thing appertaining to it, is managed with great energy and good judgment; and we were glad to learn that his trade is large and profitable.

At the cemetery at Augusta we saw fine hedges of the Golden and Chinese arborvitæ and other evergreens, with rhynchospermums, camellias, and gardenias. The Norway spruce appears to thrive admirably here, though it does not succeed with Mr. Berckmans. Mr. Berckmans told us of a Cloth-of-Gold rose, which we had not time to visit, trained on the walls of the Augusta factory, covering a space seventy feet high by a hundred and twenty broad, and whose stem is a foot thick.

From Augusta we swung round to Atlanta, the new capital of Georgia, where we were greatly surprised at the enterprise displayed, and the rapidity with which whole streets of new buildings had risen on the ruins of those destroyed by the misfortunes of war. The capitol is a handsome and commodious building. Here we met our former associates and co-laborers, Col. Richard Peters, and Dr. L. E. Berckmans, the pupil of Van Mons and associate of Esperen, who had come a long distance to meet us. The pear succeeds tolerably with Col. Peters, whose fine grounds we visited; among which we noticed good trees of the Bartlett, Duchesse d'Angoulême, Buerré d'Anjou, and Brandywine; the principal obstacle being the blight. At Rome, on the highlands, where Dr. Berckmans is now located, and with his usual zeal testing every variety under his own inspection, we may

anticipate good results. On the way from Atlanta to Nashville we saw miles of cotton-fields, in some of which laborers were still at work glean- ing the crop. At Nashville our time was much limited ; but by the po- liteness of Mr. Peck, brother of Prof. Peck of Heidelberg, whom we met abroad last year, we visited Mr. Lysches' well-managed nursery, where he had very fine specimen pear-trees, which succeed well. We rode out to Gen. Harding's plantation ; but the general was on a deer-hunt in his park of twelve hundred acres. We could hear the hounds and horns, and saw on the lawn a fine buck which had just been sent in. His estate embraces three thousand acres of splendid soil, some of which was so fertile, that it had never been manured. We saw his large stock of blood-horses and their progeny, for which he is so celebrated ; also his Cashmere goats, whose wool, seven inches long, scarcely less beautiful than a maiden's wavy tresses, commands a dollar and sixty cents per pound.

At Louisville, soon after our arrival, our valued and esteemed friends and patriarchs in horticulture, Messrs. E. D. Hobbs and Lawrence Young, pro- fered their attentions ; but, Sunday intervening, we were unable to visit these or other places of note. We, however, rode to the cemetery, where are many very fine monuments, thousands of soldiers' graves, and most of the old and new choice evergreens, shrubs, &c. Arriving at Cincinnati, we most gladly accepted the courtesies of our former acquaintances, R. Buchanan and M. Werk ; of Capt. Anderson, president of the horticultural society ; and of Mr. Resor. After examining the samples of Mr. Werk's wines, for the manufac- ture of which he is so noted, we took a stroll through the extensive wine- cellars of the famous Longworth Company. These embrace a large stock of the best varieties, among which we noticed a new sparkling wine from the Rentz grape, which the visitors esteemed highly. Capt. Anderson, the present proprietor, is among the most liberal citizens of Ohio, having given five hundred dollars for premiums on grapes and wine last year.

But we must not omit to allude to our visit to the Spring-grove Cemetery. This comprises four hundred and twenty acres of beautiful rolling land. Under the care of its present superintendent, Mr. Strauss, every thing is in the best condition. He introduces into the planting and ornamenting of the grounds only the most appropriate subjects. But what especially pleased us was the fact, that, by the regulations, all curb or edging stones around

the lots or on the avenues, and all iron fences, are prohibited. Many of the structures here are of the most expensive character; one belonging to the Dexter family costing seventy-five thousand dollars. This is in the Gothic style, with chapel above, and columbaria below. Near by are the pillars erected in memory of our old associates, Nicholas Longworth and A. H. Ernst. The grounds of Spring-grove Cemetery are laid down to a closely-kept verdant lawn, over which the eye may roam unobstructed, save where it rests on elegant monuments and ornamental trees, — no cumbrous stone division-lines, no fantastic fences. How appropriate these resting-places for the loved and lost ones of earth! How touching these monuments to departed friends! How beautiful these graceful trees, weeping responsively over them! How soft the Kentucky blue-grass, under which so calmly reposes the weary, way-worn traveller of life!

Marshall P. Wilder.

IMPROVEMENT OF THE NATIVE PLUM.

It has long been evident to intelligent horticulturists that the cultivated plum of our gardens (*Prunus domestica*), which is a native of Southern Russia, the Himalayas, Caucasus, and many parts of Europe and Asia, has ceased to be of much if any value in most parts of the United States; not so much on account of the unsuitableness of the climate as that its insect enemies have become so numerous that most of the fruit is destroyed before it matures, and the trees are either killed, or so badly injured that they produce worthless fruit.

While the borer (*Aegeria exitosa*) bores into its trunk or roots, sapping the life or health of the tree, and the slug (*Blennocampa cerasi*) feeds upon its leaves, the more destructive curculio (*Rhynchænus conotrachelus nenuphar*) attacks the young fruit, and causes it to fall prematurely to the ground. So thoroughly does the little Turk accomplish his work, that, in large districts of country, a perfect, mature plum is rarely seen.

Many remedies have been proposed for this insect evil, and many devices contrived to circumvent the insidious foe. I do not now propose dis-

cussing them, except to say that few of them have any effect; and those that have merit require such an amount of care, labor, and persevering attention, that not one person in a thousand attempts to apply them. They may all be set down as impracticable. Are we, therefore, to say we will have no plums?

There are four if not five or more species of plums indigenous to this country; to wit, the Chickasaw Plum (*P. Chickasa*), the Moose or American wild plum (*P. Americana*), the Beach or Sand Plum (*P. Maritima*), the California Plum (*P. subcordata*), and perhaps the Myrobalan or Cherry Plum (*P. Myrobalana*). These have sported into numerous varieties, many of them of considerable excellence. But the fact about them of the greatest importance is, that most of them are less liable to the attacks of the insects that prey upon the cultivated plum, and, so far as I have observed, free from its diseases: in fact, there are several varieties that I have never known to be attacked even when planted among infected foreign trees. In this fact is found the answer to my question; and also the demonstration, that we can have plums in spite of the curculio and his allies.

It is said that the native plum is not of sufficient excellence. Admit it. What prevents us from making it so? Were any of our fruits, in their wild state, what they are now? Did the Seckel Pear, the Spitzenberg Apple, the Iona or Delaware Grape, or any of our luscious garden or orchard fruits, originate in a wild state? If so, the objection is good. But it is not so. Through the same means that were used in perfecting them, or similar, I predict that our native plum-trees will yet produce fruit superior to any foreign variety, and free from insects, and perhaps disease.

The simplest plan to do this is to select the best we have, and from their seeds obtain further varieties. Of the best of these, again plant seeds; and but a short time will elapse before we have something near what we want: at least, the wild habit of the tree will be broken up, and the tree become tamed, and, at each reproduction, become more susceptible of improvement. If the thousands of horticulturists in the United States would each plant a few seeds this year, more than a million of trees might be produced; and in three or four years, by grafting them on bearing trees, they might be fruited. By concerted action, the object might be attained at

once. Let this be repeated, and who doubts the result? I have been for several years raising seedlings from wild fruits, and particularly from the plum; and think I have made some progress. By way of encouraging the thing, I propose exchanging seeds with any and all who may send me seeds of the best plums and other wild fruits to be found in their vicinity. I will record their names, and thus form a society for the improvement of all our native fruits.

A more certain means of improvement, but requiring greater skill and nicety, is by the artificial production of hybrids, or crosses, between our native and the foreign species. It may be said that cannot be done. It was believed for a long time that the native and foreign grapes could not be crossed. It has been accomplished, however, and has shown almost to a certainty that the road to success is open; and, if it can be accomplished, we may expect grand results. Let it be tried. I have made but one effort at crossing, and that was between a variety of the Chickasaw (Newman) and the Cherry Plum, or Myrobalan, the latter considered not a native; which I think is a mistake. I have a hybrid tree of this cross, now four years old, that bore a few plums last year; which is a vast improvement.

Europe, and the Old World whence came our present cultivated fruits, had no fruits naturally so good as some varieties of our wild plum; and what it took them centuries to accomplish, we, by taking advantage of their experience, may do in a generation, or less time. One generation ago, our wild grapes were considered of little value, and were scarcely planted at all. It is not so now. The excellence attained by them is only an incentive to the same efforts with other wild fruits.

The following list embraces all of the varieties of native plums, so far as I can learn, that are considered of sufficient value for cultivation:—

The Chickasaw Plum.—This is a native of the Southern States, and abounds in Arkansas and Texas as a shrub four to five feet high. In Alabama, Georgia, and Tennessee, the tree grows to the height of fifteen feet. It is not found wild north of Tennessee. The fruit is generally about the size of a partridge-egg; varies in color from a deep red to a pale yellow; pulp yellow: when ripe, the flesh next to the skin is sweet and well flavored, but, next to the stone, is very acid. The red varieties are the best. The cut is a fair representation of the wood, leaf, and fruit. The

fruit is produced from spurs, and in clusters. It is diœcious ; some trees only producing staminate or male flowers, some only pistillate or female flowers. It is also monœcious, flowers of both kinds appearing on the same tree ; while other trees have perfect or hermaphrodite flowers. The last only are worth planting. This peculiarity, I believe, is common to all of our native plums. It is propagated generally from the root-sprouts, which are thrown up in great numbers all around the trees, soon forming a dense grove if left undisturbed ; in which condition most persons consider them to bear best : but the largest and best fruit is obtained when the sprouts



are kept down. The trees should be planted ten feet apart.

The Chickasaw Plum, where it has been cultivated north of its natural habitat, is very much inclined to vary from its wild type, not only in color, but in size and quality. One of its sports, known as

The Newman Plum, I consider the greatest improvement yet made on any of our native plums. The tree is a rapid grower, and attains more than double the size of its parent. The fruit is large, or, compared with native plums, very large. The fruit, as represented in the cut, is of about an average size. It is of a beautiful glossy red color, with a delicate pur-

ple bloom ; translucent, with numerous white specks or dots all over it ; sweet throughout ; almost pulpless. The stone is flattish, of medium size.

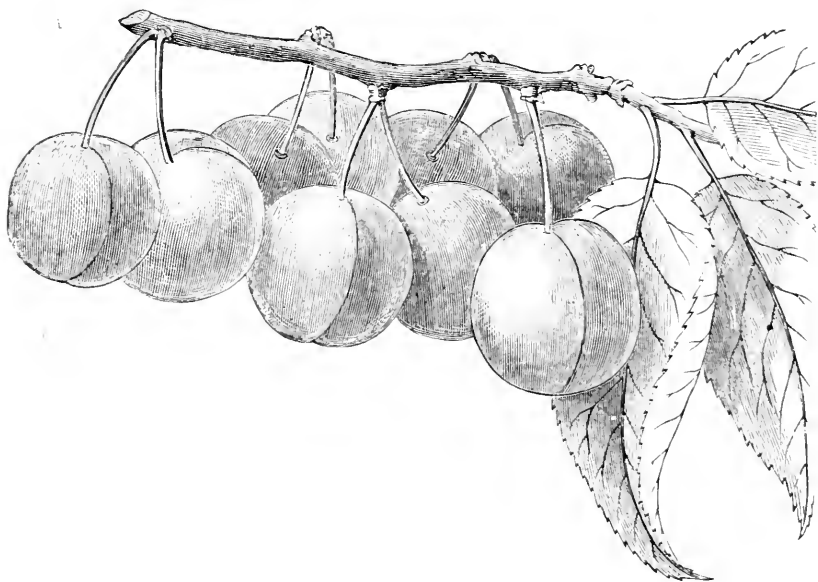
In an orchard in which there are twenty varieties of the foreign plum, it has produced a crop every year since the trees were two years planted out, now eleven years ; and while the curculio has destroyed all of the fruit on the foreign varieties, and most of that on the Chickasaw and some other native varieties, I have never yet seen the crescent-cut in the skin, nor a



worm in the fruit. It is very prolific. If the fruit be gathered just as it begins to change color, it will keep two weeks ; but, if picked too green, it loses some of its flavor.

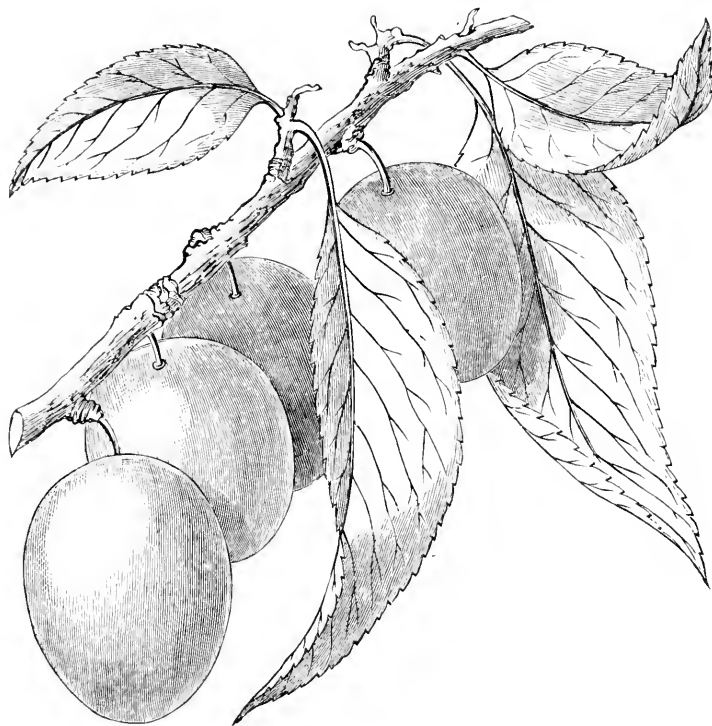
I have also a yellow variety, that in growth of tree and leaf, and size and shape of fruit, cannot be distinguished from the Newman ; but the fruit is of a waxy yellow color, and its quality is far inferior, — about equal to the common Chickasaw.

Langsdon Plum.— This fruit is known about Louisville by this name. I obtained my trees from a gentleman who got it from Illinois, and who represented that it grew wild in that State. He called it Illinois Plum. It turns out to be identical with the Cherry or Myrobalan (*P. Myrobalana*), except that it is more than a month later in ripening; the Cherry ripening the last of July, while the Langsdon ripens in September. It differs from the Miner in being more globular, with a longer stem, and having a deep suture, which gives it the appearance of a very large cherry. The thick,



tough skin common to this species renders it nearly curculio-proof. There are two sub-varieties cultivated in Kentucky, that ripen the last of October. One is red, and in all respects like the Langsdon: the other only differs in being of a lemon-yellow color. Those who admire the Miner and Langsdon should get the true Early Cherry and those two late varieties, which would extend their season to four months. There are one or more orchards of the Langsdon Plum near Louisville, which are very profitable: all other plums being out of season, they sell for eight to ten dollars per bushel in that market, and will bear shipping to the most distant markets.

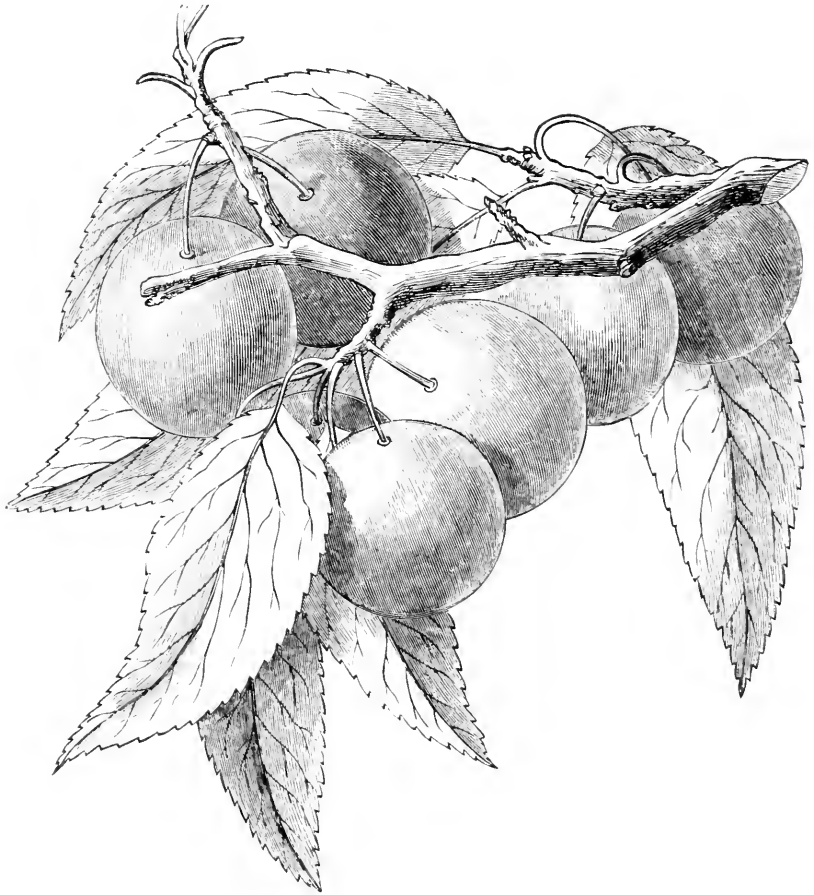
The Miner Plum. — This plum received its name from a Mr. Miner of Grant County, Wis., who took the trees there from Illinois. I received my trees from Wisconsin, but have not yet fruited them. I am indebted to a gentleman who has fruited them for the outlines of the fruit as represented in the cut. The leaves and wood are drawn from the trees I have. There has been some controversy as to whether it is a native or not.



Judging from what I have seen of it, I am of opinion that it is a variety of the Myrobalan or Cherry Plum, and a native. A correspondent of "The American Agriculturist" pronounces it a Chickasaw. He is certainly mistaken; for it resembles it in no respect. The fruit is red, of medium size; is very firm and hard; and has a thick skin, which the curculio finds it difficult to penetrate. The leaves have on them two pairs of globose glands, — one pair on the stem, and the other on the margin of the leaf, —

a peculiarity not common to plums. It ripens in Southern Illinois in September, in Wisconsin in October. Its season makes it desirable; but, from all I can learn, its quality is inferior.

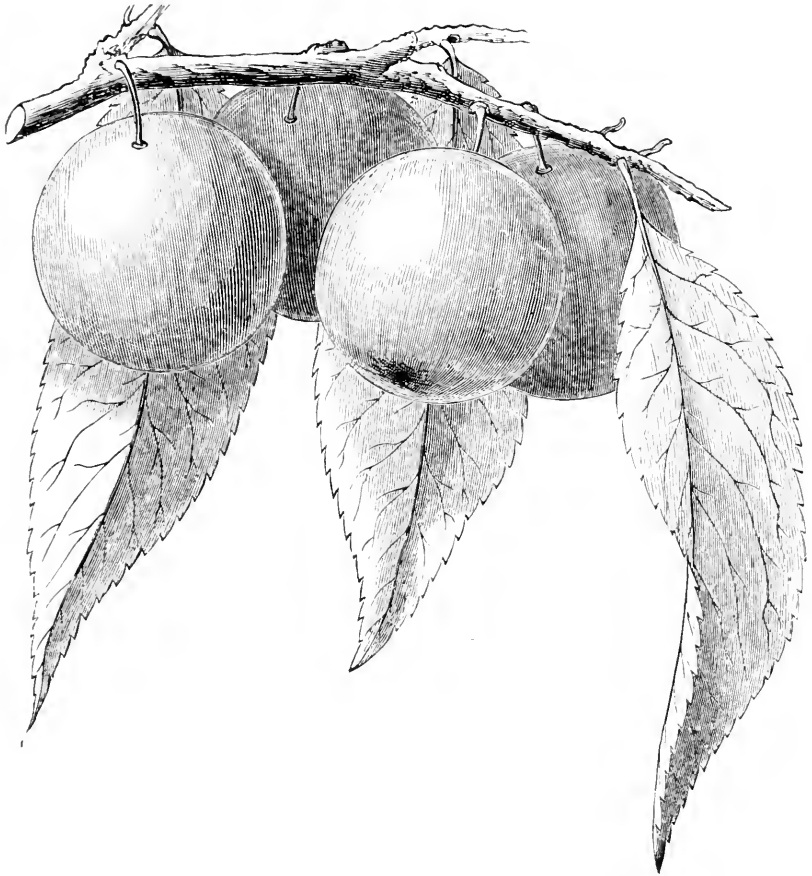
Muldraugh's-hill Plum. — This is a variety of the American or Moose Plum (*P. Americana*), found wild on Muldraugh's Hill, in Hardin County,



Ky. It is a large plum, of a light red color, and is an improvement in that species. Ripens in August. Tree vigorous, and attains a large size, but does not bear heavy crops, as it is monœcious, the staminate flowers predominating largely.

It is quite ornamental when in bloom, as it is completely covered with large clusters of flowers, like snowballs, before a leaf appears.

Wild-geese Plum. — There is a tradition that this plum received its name from the fact that a gentleman in Tennessee killed a wild goose, and



found in its craw some plum-seeds, which he planted, and produced this fruit; or that the wild geese flying over dropped the seed where they grew, — which, to say the least of it, sounds a little apocryphal; or as Dr. Phillips of Mississippi says, “As well to have said the man in the moon spat out the seed. Wild geese may eat plums (?); but they do not fly over Mississippi or Tennessee in plum-time.”

This tree has been so extensively raised from seed (it will not exactly reproduce itself, which it might do if first fed to wild geese), that the fruit known by this name in different sections is quite dissimilar; so that the name now applies to a class of plums rather than a variety. This accounts for the differing opinions and representations we have of it.

The sub-varieties have a great many local names, — as Nolan Plum, Eureka Plum, Hog Plum, Goose-egg Plum, Tennessee Plum, King of Plums, &c.; each of them, perhaps, differing from the others in some particulars. The general characteristics of the fruit are shown in the cut. It belongs to the species *P. Americana*; but some of its characteristics would indicate a cross with the Chickasaw. The fruit is large to very large (some are small), of a deep red color, with a delicate purple bloom (some describe it as of a purple color); flesh yellow, juicy, and sweet. It is generally represented to be free from the attacks of the curculio; although "The Southern Farmer" says, "Two or three trees alone will generally fall a prey to the curculio." It ripens in July and August.

The growth of the tree is rapid, open, and spreading, attaining a large size; bears early and abundantly. It is easily propagated from root-sprouts.

This is a fruit worthy of attention. It is at least a good point to start from, being already in a state of variation, and strongly inclined to depart from its natural type.

D. L. Adair.

HAWESVILLE, KY.

GRAPE-GROWING IN WISCONSIN.

THE year 1868 will be memorable in the history of grape-growing in this State. Never in Wisconsin were so many vines injured and destroyed as last winter. The causes alleged were the frequent thaws, and the want of the usual covering of snow; but, in my opinion, the origin of our vine-failures dates back to the prolonged visitation of cold weather in the previous August, preventing the thorough ripening of the wood. I noticed, in pruning my vines in November, 1867, that the canes of nearly all my

varieties were not thoroughly ripened ; that in some varieties the wood was rather soft to the knife, in others the upper halves of the canes (grown four feet high on the double-arm plan) were green. This unripened condition of the wood left the vine in a too tender state to resist the cold, and especially the repeated thaws, of the winter ; and though I took great care to shorten the arms of such vines, and to give them more covering than before, they suffered to such an extent, that I had not more than a third of my usual crop. The bunches and berries were small, and the flavor more or less injured ; the skin being very acid, and irritating to the lips and mouth.

The vines which came through the season unaffected were the Delaware, Creveling, Hartford Prolific, Northern Muscadine, and Clinton. Among the affected vines, the Concord and the Josephine were the least injured : all the other vines suffering more or less ; some, including nearly all those planted last fall, being destroyed. You can judge of the grapes we are growing in this North-West by the list I exhibited at our State Fair in September last. The Delaware never before so fine, the Creveling ditto, Clinton ditto, Hartford Prolific and Northern Muscadine ditto. The Concord and Josephine never before injured with me ; Rogers's Hybrids Nos. 1, 2, 4, 9, 15, always before this season doing splendidly ; Isabella, Anna, Allen's Hybrids (this year affected with mildew and rot), Union Village, Rebecca, Mount Lebanon, To Kalon, Ives's Seedling, Diana, Cassady, Charles, Hyde's Eliza, and Catawba, all more or less injured, but ripe, with the exception of the Catawba, which, though it grows fine bunches, has never ripened with me. The Mount-Lebanon, exhibited for the first time here, is poor in every respect, smaller than the Charter Oak, but of the same character, and worthless. Its odor is offensive. The Janesville, our new seedling, ripe, but injured. The Charles, first time exhibited at our State Fair, is little or no better than the Clinton, which it very much resembles. In all, twenty-six varieties ; nearly all of these varieties, and some others I have exhibited before, excepting the Catawba, having ripened thoroughly, and done well.

Rogers's No. 3, Adirondac, and Norton's Virginia, bearing-vines, were killed to the ground, and the Cuyahoga killed outright.

Joseph Hobbins.

THE ALLAMANDA.

WE give, this month, an illustration of one of the most ornamental stove-plants. All the allamandas are natives of South America, the larger proportion coming from Brazil. It will thus be seen that they with us require stove-culture; and it is only when well grown in heat that they develop their splendid golden flowers. All are low climbers; though many are of low growth, and are often cultivated as shrubs.

Generous culture is essential to their successful growth; but their magnificent panicles of gorgeous flowers, which in some species are four inches in diameter, well repay the necessary care.

They thrive best in rich, loamy soil, with moist heat.

Cuttings strike freely in sand, in moist bottom-heat.

The plants flower very young, — often blooming when only a few inches high; but it is only in large plants that we see the full beauty of the genus.

The general culture is very simple. During autumn and early winter, the plants should be at rest, and will generally lose their leaves. At this time they should be kept rather dry, and in a cool house, but should never be chilled. After the turn of the year, they should be repotted, pruned into shape, and placed in heat; giving water freely after they begin to grow.

Do not allow the growth to be checked, or let them suffer for water. They will soon show flower, and continue blooming during the summer. When bloom is over, and the wood is well ripened, they should be gradually allowed to go to rest.

A. Schottii is a fine species, with large, yellow, funnel-shaped flowers; the lower part contracted, of a deeper yellow, — the upper expanding into a bell-shaped throat.

A. nerifolia has large panicles of smaller flowers, yellow streaked with orange.

A. violacea has reddish violet flowers, and, when first introduced, made a sensation in the horticultural world, as it was represented as having blue flowers; but the color is not attractive, and it is desirable only as a species.

A. Aubletii and *cathartica* (which is, perhaps, the same) are fine species.



A. grandiflora has magnificent, large, golden flowers.

A. Wardiana, the subject of our illustration, is perhaps the finest, as it is the most recently-introduced species.

We copy the following remarks upon its characteristics from "The Floral Magazine," to which we are also indebted for our illustration:—

"A fierce and strong battle has been waged during the last season with regard to the different allamandas in cultivation, not only as to which was the best, but as to their identity. Into the merits of this controversy it is not our intention to enter, especially as they are now in course of trial at the Royal Horticultural Society's Gardens at Chiswick. We have only to bring under notice one which for its qualities is likely to be a general favorite, and which has been exhibited by Mr. Ranley Tanton of the Epsom Nurseries, to whom we are indebted for the following remarks:—

"The plant was introduced from New Grenada, and is as distinct from all other species as possible. With all the art I can bring to bear upon their culture at the present time, *Schottii*, *Cathartica*, *Grandiflora*, *Parenisis*, *Aublittii*, *Nobilis*, *Hendersonii*, are all deciduous and at rest: and in the same stove I have the plant which has been in flower since the 5th of March last; also some young ones, all in full, glossy, vigorous foliage, and in full flower, as exhibited at the Floral Committee, South Kensington, on Tuesday, Dec. 15. This, even of itself, is a sufficient guaranty of its being a distinct species. There were upwards of a hundred blooms on the plant exhibited on the above day: and at this season it is really a desirable plant; for the blooms come in now with their unusual color for dinner-table decoration and for cut-flower work. We exhibited the other day a small plant in sixty pots, bearing a flower from the corymb these blossoms had previously dropped.'

"We need add nothing to the above; remarking only, that the deeper color of the throat and the deep maroon-color of the outer side of the flower mark its distinctiveness."

E. S. Rand, Jun.

PARLOR-PLANTS. — No. III.

THERE is no better plant for window-culture than the cyclamen. Neat in foliage, easily cared for, beautiful in flower, and of low habit, it seems especially adapted for growing where but little room can be afforded.

It also thrives well in an atmosphere where many plants suffer, as it is but little affected by the unconsumed gases which pervade the air of most rooms heated by furnaces, or where illuminating gas is used.

In some varieties, the foliage is most beautifully marbled, dark green and white; and, in all, the contrast between the upper and lower surface of the leaves is very pleasing.

In the flowers, there is an endless variety: first, the species differ greatly in form and color; and, secondly, the varieties sport into infinite number of shades, varying in intensity even on the same plant, according to the age of the flower.

Another recommendation is the permanency of the flowers, which remain in perfection many weeks. A plant in our window has been in bloom now (Feb. 1) three weeks, and will continue in good condition for at least a month longer.

During the past few years, great attention has been paid in England to the culture of this plant; and the horticultural journals have been filled with cultural reports and discussions about species and varieties. We do not propose to even state the different theories, as our limits forbid, but would refer those curious upon the subject to "The Cottage Gardener," 1867, 1868, 1869, *passim*.

The summer and autumn blooming species, of which *C. Europeanum* and its varieties are examples, are not specially adapted for parlor-culture, as they bloom at a season when flowers are not wanted in the house.

C. coum, *Neapolitanum*, *repandum*, and *vernum* are all fine species; but it is to *Cyclamen Persicum* and its numerous varieties that we must look for the winter adornment of our windows.

In this species the leaves are heart-shaped, toothed at the edge; deep green with gray or white marbling, and pale flesh color on the under side: they vary much, however, on seedlings. The flowers vary from pure white

to deep scarlet, have very long petals, and are generally deliciously fragrant.

C. Atkinsi is a beautiful hybrid between *C. Persicum* and *coum*, with scentless flowers of various shades of white and red: it is a winter-bloomer, but does not thrive as well with parlor-culture as *C. Persicum*.

The soil for cyclamen should be a mixture of leaf-mould and sharp sand, with the addition of a little peat and turfy loam, if they can be procured. These should be well mixed, but not made very fine. Pot the bulbs, in September or October, in pots about three times the diameter of the bulb, with good drainage, so that the crown of the bulb will be just above the surface of the soil. Water, and place the pots in a warm place, keeping the soil only damp until growth begins. Then place them in a sunny window, and give plenty of light and air; being careful never to let them flag for want of water. They will soon show bloom. After the blossoms have faded, remove the seed-vessels (unless seed is wanted); and, when the foliage begins to fade, gradually withhold water, and after a few weeks give none at all. Place the pots out of direct sunshine, but never allow the bulb to shrivel.

A good plan is to bury the pots in the open ground in the summer, covering them about a foot deep: the bulbs come out in the autumn plump and sound, in the best condition for an early start. Cyclamen are propagated by seed, which should be sown about February, and which, with ordinary culture of drying off each summer, bloom the third year; but they may be forced on so as to bloom in half that time by shortening the season of rest.

Could we have but one window-plant, we should choose a cyclamen.

There is no more fragrant flower than the Mahernia, and it is well adapted for window-culture. All the species, of which there are more than a dozen, are pretty, low shrubs, natives of the Cape of Good Hope.

They have all been long in cultivation, and are favorite inmates of our greenhouses.

The most common species is that ordinarily called *M. odorata*, but more properly *M. glabrata*, which is a favorite with florists, from the delicacy of its fragrant yellow flowers. This plant thrives well and blooms profusely under window-culture, scenting the whole room when in bloom. The soil

should be loam and sandy peat in about equal proportions, with good drainage. Give plenty of air and sun, and be careful the plants do not suffer for want of water. During the summer, plunge the pots in the ground, and repot in autumn; but be careful not to disturb the roots, as the plants do not transplant easily.

Cuttings strike freely in sandy soil under a bell-glass or tumbler, and if rooted in spring, and well grown during the summer, will make nice blooming plants by the following autumn.

The foliage of these plants is neat, finely cut; and the species are seldom troubled with insects. They may be had in bloom from January to May, according to the amount of heat given.

A charming bulb for window-culture is the *Oxalis* in its many species, of which there are about a hundred and fifty. Of these, however, very few are in cultivation, and many are not bulbous. Some are well-known wild plants, and a few are hardy inhabitants of our gardens.

The blossoms are generally very pretty, and freely produced; and the foliage is very neat, and often elegant.

They require but little care, except to avoid over-watering. The proper soil is loam, peat, and sand. As the bulbs are small, several should be planted in the pot to produce a good effect.

Most of the species in greenhouse cultivation are natives of the Cape of Good Hope, and require the ordinary treatment of Cape bulbs: which is simply to pot them in October; water slightly until they begin to grow; then give plenty of air and light; increase the supply of water until the flowers have faded, and the foliage begins to turn yellow; then gradually withhold water, and dry off the plant.

The best species for house-culture are *O. versicolor*, a charming plant, well adapted for hanging-baskets: flowers white inside, red outside, and very pretty when half expanded. *O. Bowzii*, large rosy flowers, blooming in early autumn. *O. flava*, a fine species, bearing a profusion of fragrant yellow blossoms.

O. luxula and the variety *alba* have large pink or white blossoms, and are very effective; but all the Cape species are pretty, and worth growing.

E. S. Rand, Jun.

ASTER CHINENSIS, — *Syn.*, CALLISTEPHUS CHINENSIS.

AMONG the numerous classes of flowers which have received the attention of florists, none have been more wonderfully improved and beautified than the *aster*, which may now be considered as one of the leading flowers of the garden.

Aster, the old-fashioned name of this interesting and ornamental family, has been changed by botanists to *Callistephus*, from the Greek, meaning



beautiful crown; which name is appropriate for the superb improved varieties of this popular flower. Probably this new name may not be generally adopted for some time to come, notwithstanding the propriety of calling every thing by the right name.

In its unimproved state, the florets of the disk, or centre, of the flower, are all perfect; that is, bearing both stamens and pistils, producing an abundance of seed; while the flat florets of the ray (the ornamental portion of the flower) are merely pistiliferous without stamens: thus, when

these florets of the disk are changed by cultivation into flat pistiliferous ray florets, they produce very little seed. Sometimes not a perfect seed can be found in a full double flower: this is the reason why the seed is so expensive. Our correspondents from Prussia write us this year, that *asters* have *earned* but a little seed this season; meaning that the produce is small. Perhaps I ought to explain to those who have but little botanical knowledge, that the aster is called a compound-flower because it is an aggregation of many little flowers, or florets as they are styled, which compose the head, or what is known as the flower.

I will now proceed to describe the different classes of these improved *Callistophus*, or *Asters*, as arranged by the Prussian and French florists.

1st, *Truffaut's Peony Perfection Aster*. — Monsieur Truffaut, a celebrated florist of Versailles, France, has made a speciality in perfecting the aster. This variety has given him notoriety among the florists of Europe and America. He has given to the amateur a flower representing the greatest perfection in form, size, and fulness. It is of vigorous growth, upright, bearing the flowers well, which are large, measuring four inches across; hemispherical in form, in consequence of the many layers of closely-set petals, which are incurved, not showing an open centre to the last stage of its flowering. The plant is about two feet high, bearing about a dozen flowers, which are so heavy when wet with rain, or in a high wind, that they are prostrated: hence the necessity of supporting each plant with a neat stick or rod. There are about twelve distinct colors, and combination of colors, in this remarkable class; viz., crimson, crimson and white, light violet, light violet and white, rose, rose and white, white, dark-blue violet, dark blue and white, and white with crimson stripes. The same colors prevail in about all the classes, with the addition of magenta-red, ash-color, pale sulphur, and dark blue, or purple violet, and indigo blue.

2d, *New Improved Rose Aster*. — This is a beautiful class. All the varieties have the most brilliant colors. Its height is about two feet, producing a branching head, displaying sometimes no less than fifty large double flowers, the outer petals finely imbricated, and filled up to the centre when quite open. The central flowers, of course, are the largest, often four inches in diameter. This new class has the most valuable qualities of the pyramidal section of asters, being intermediate between the large-flowered Im-

brigue and Truffaut's Pæony Perfection. A plant in full bloom is a magnificent object when grown in rich ground as a single specimen ; or the different colors, when planted in beds about a foot apart, make a solid mass of bloom of unspeakable beauty. The colors are blood-red, brilliant rose, dazzling white, indigo, indigo with white, light blue, light blue with white, brilliant crimson, peach-blossom, crimson shaded with white, deep purple, azure blue, and many other brilliant selfs and party-colored flowers.

3d, *Improved Large Imbricate Aster.* — This class represents the greatest perfection of pyramidal asters, with recurved petals ; fine regular form of flowers, double to the centre, producing but few seeds. Two feet high ; ten or twelve varieties of brilliant colors.

4th, *New Imbricated Pompon Aster.* — This is a most beautiful class of pyramidal asters, with small globular flowers, very full and compact, producing them in clusters upon branching stems fifteen or twenty inches high. There are many splendid and delicate colors, and combination of colors, in this class. Suitable for bouquets.

5th, *New Victoria Aster.* — One of the most beautiful asters in cultivation ; flowers very double, imbricate, globular, four inches in diameter ; habit pyramidal ; a foot high ; from ten to twenty flowers, and not surpassed by any of the novelties of the family. Colors carmine, Hortense, dark blue and white, light blue and white, light blue, white, and crimson.

6th, *New Giant Emperor.* — In about twelve varieties ; a foot and a half high ; flowers very large size, and well up in the centre, producing but few flowers on a plant, which, when perfect, are 'gigantic indeed, but not so delicate or desirable as in many other classes. Many of the flowers are inclined to be imperfect, especially those on the branches. Style of growth very distinct.

7th, *Crown Aster.* — This is a superb class, and distinct from all others. The central portion, or disk, of the flowers, is pure white, surrounded by a broad margin of colored ray flowers according to the different varieties ; viz., purple, violet, crimson, rose, &c. Flowers large, flat, free-flowering ; two feet high.

8th, *Pæony-flowered Globe Asters.* — Originated from and of the same robust growth as the *rose asters*, but with spreading branches in the way of the old *globe asters*. The flowers are very large and double, the central

petals incurved like pæony asters ; whereas the outer petals are recurved and imbricate. Beautiful in habit, full blooming, and extremely showy. In about twelve colors, bright and distinct.

9th, *New Dwarf Chrysanthemum-flowered Aster*. — In size of flowers, and habit of growth, this surpasses all other dwarf varieties ; a foot high. The flowers are full, chrysanthemum-shaped, produced in large clusters, or bouquets, from ten to twenty in a truss, very delicate and beautiful in color ; in about ten or twelve varieties.

10th, *Dwarf Pyramidal or Dwarf Bouquet Aster*. — New and pretty, about a foot high, and literally covered with flowers. — from twenty to fifty on a plant. Some of the colors are exquisite, — carmine with white points, white with blue or carmine points, white with salmon centre, &c.

11th, *Boltze's New Miniature Bouquet Pyramidal Aster*. — Perfect gems ; new and beautiful, of various colors. in compact bouquets of six or eight ; constant in habit and height. and extremely free-flowering ; six to eight inches high, according to the richness of the soil. A bed of this class, when planted about six inches apart, presents a delightful appearance. The truss of flower springs directly from the ground, having only a few green leaves as a base.

12th, *Pyramidal Hedgehog Aster*. — This is a very singular and unique class. The stems are upright and branched, each branch terminated by a single flower, which is filled up with needle- or quill-like petals. Colors various ; height a foot and a half.

The Prussian florists have in their catalogues about forty different classes ; but the twelve I have described are more than sufficient for almost any garden, however large. The German quilled aster was formerly considered one of the finest sorts ; but the globe-quilled improved now takes its place, but is inferior in comparison with other classes.

The Pyramidal Ranunculus Aster is very pretty, but is hardly worthy of a place in the garden where the more showy varieties are cultivated.

CULTIVATION OF THE ASTER. — The first thing to be considered in the cultivation of the aster, and I may say for all flowers, is the condition of the soil. Nearly all flowers require a rich, dry soil, fifteen or twenty inches deep, so that the plants may not suffer in dry weather. If the subsoil is inclined to retain water, it should be thoroughly drained ; if the soil is poor

and shallow, it should be made deep by adding compost made of good virgin loam, or sods from a pasture or roadside, and leaf-mould. To enrich the soil, give a good supply of almost any sort of well-rotted manure. It is a good plan to have a compost-heap always on hand, made up of fresh turf and leaf-mould from the woods, to which soap-suds and other slops may be added from day to day, and the heap turned over occasionally: thus a valuable compost will be in readiness for dressing or deepening the flower-beds when wanted. If the soil is too heavy, add sand. If the subsoil is poor, do not bring much of it to the surface when trenching: there is such a thing as over-doing a good thing, as I once found out by experience. My gardener brought so much of the poor subsoil to the surface on one lot, that a number of years had passed, and frequent coatings of manure had been applied, before the soil regained its original fertility.

Time of Sowing. — It is not necessary to force aster-seed, to have the plants in season to bloom the last of August and September; but it may be sown in the open ground any time in the first part of May: but, in all cases, the seedlings should be transplanted, when of suitable size, into beds, in masses or singly. I have been accustomed to sow the seed in March in a cold grapery: it may also be sown in a cold frame if strong plants are wanted; but, if forced and brought forward too early, the plants flower when the weather is so hot, that the bloom is sometimes scorched, and continues but a little time. When the seed is sown in March in the cold grapery, I have strong plants to transplant the first of June. I thought my display of asters could not be exceeded two seasons since: gardeners who called said they had not seen any thing like it. An amateur who resided a few miles distant saw them, and pronounced them splendid, but said he could beat them, which I doubted. Thereupon he invited me to call, and judge for myself; which I did the next week. It was rather hard to own beat; but I had to confess it. I inquired of the gentleman where he obtained the seed: he replied, "At your own store." I found that he sowed the seed in the open ground in May. He had transplanted into cool, airy places, in masses, in beds in grass; while mine were planted in a grape-border, very much exposed to the sun. His asters were more than a fortnight later, consequently more brilliant and perfect if possible. The varieties of seed he had sown were those I have described in cases No. 1, 2, 3, 4, and 11.

Joseph Breck.



THE VERBENA DISEASE. — It is now about ten years since the verbena became subject to the disease called “black rust:” and, ever since, it has suffered more or less from its effects; the result of which has been, as might be supposed, much annoyance to cultivators, and disappointment to those who have grown it as a bedding-plant. Being one of those who have felt much inconvenience arising therefrom, and anxious to obtain more correct views as to its nature, I would, with many others, thank any one who would lift the veil which now rests upon the subject. Perhaps in proper hands this might be done, or at least the question put in such a shape as to simplify the process of investigation as to its cause, but more especially how to prevent it. As minute and microscopic fungi stand closely related to many of the diseases to which plants are subject, it would be well if horticulturists knew more of their characteristics; the conditions, favorable or otherwise, to their growth and development; as it might enable them, sometimes at least, to guard against their insidious attacks. Many plants seem to have one or more parasites peculiar to themselves, which, if not actually living at their expense, only bide their time, or are conditionally restrained from entering upon a conflict too often resulting in much harm being done, if not totally destroying them. As a proof of this, we need only call to mind how much grape-vines suffered from *Oidium Tuckerii* some years ago, and the potato from *Botrytis infestus*.

And now, since these pestiferous visitants have become greatly less destructive to these plants, the verbena is the victim of one or other of their confederates, which threatens sooner or later, if not restrained, to render it unfit to occupy the place it has so long held without a rival or successful competitor.

In reference to the cause of the disease, we have assumed it to be the work

of a fungus, although, so far as I am aware, not yet described and named. Plants infested by it manifest signs of being held in the embrace of an enemy unwilling to quit its hold so long as life remains. The parts affected have a dark and singed appearance, every way resembling fungous growth, and after a while may be reduced to powder by simply rubbing with the fingers. It generally announces its presence by first attacking the most tender leaves and delicate buds; and, as it continues to unfold itself, the whole plant becomes dry and crisp. Unlike many fungi, however, which grow upon plants, its ravages are not confined to the leaves and stems alone, but extend to the roots as well; and, from certain indications, I am inclined to believe these organs quite often are the first to become diseased. I have at least observed one or more diseased roots on almost every plant examined; and in bad cases they have precisely the same appearance as the other parts affected; but whether from aggregations of fully-developed fungi, or blisters caused by the growth of mycelium under the skin, I am unable to say. It can hardly be disputed that the fungus which causes smut in wheat "enters the plant from infested seed on its first germination, and is propagated not only by its seeds and spores, but by still smaller granules from its mycelium." If this is not so, why are farmers in the countries where this disease is prevalent at such pains in selecting their seed, and subjecting it to the process of "pickling" before sowing? Those who practise this precautionary measure do not claim for it the power of entirely preventing the disease; but experience has taught them, that, when seed is so treated, their crops are comparatively clean. It therefore seems in accordance with analogy to suppose the disease in the verbena proceeds from a similar cause, operating in much the same way, though different as regards the products which so injuriously affect the plants concerned. And further: it may be stated that diseased roots exhibit traces of dark lines running up toward the stem, and gradually assuming an appearance which indicates, that, whatever process has been at work, the cellular structure has been most hurtfully interfered with, — a work which the spawn of fungi is well able to do.

But, although this view points in the direction of the poison entering the plants by the roots, it does not necessarily follow that this is the only way by which they might become infested: for, even supposing this to be the case, it is just as likely that the spores carried about by the atmosphere will germinate and grow wherever a suitable *nidus* is found; while the conditions required might be in the ground, or on the roots, as well as on the leaves of the plant. Observation teaches that the spawn of many fungi grow and do much harm in circumstances where they do not produce spores at all, as in the case of dry-rot in timber and the fairy-rings of the superstitious: while quite a large class, "the minute pests of plants, bear spores in vesicles without definite arrangement," and these might be produced wherever the thread-like mycelium extends. For aught, therefore, we know to the contrary, as well as for reasons already stated, the verbena may receive with its food the poison which kills it; and that poison in a semi-active state may be the cause of the hardening and curling of the leaves, as is often the case even when there is no discoloration.

Notwithstanding these views, however, I am far from supposing that sufficient

evidence has yet been adduced fully to warrant the belief that fungi alone are the cause of the disease, although it seemingly points in that direction.

Plants have their parasitical animals as well as vegetables, and some of these are capable of doing all the mischief complained of. It may be remembered, while the potato-disease prevailed to such an extent as nearly to destroy that esculent, many maintained, and with good show of reason, that it was caused by an insect, *Aphis vastator*; and this inference was derived from the fact that that insect was frequently found on diseased plants: but the investigations of Mr. Berkley conclusively proved, that, though often found upon the diseased vines, they were not invariably met with, while the fungus *Botrytis infestans* was never absent. So it might be in the case of the verbena; for quite often the young leaves present an appearance as if gnawed by such creatures as have been seen upon them. But the question arises, Are those "mites" invariably met with on diseased plants? If so, then it may fairly be presumed that they are the cause of the disease; otherwise we must look beyond for something else sufficient to account for effects which we see produced. And there seems no view so much in harmony with analogy as that which refers it to the ravages of one or other of these minute fungi, which play so important a part in the wonderful economy of Nature; although, at the same time, the primary cause of all may be constitutional debility, induced by long and unnatural modes of propagation and culture.

It would be well could a remedy be suggested for the evil complained of; but this cannot be done. Our object has been rather to induce growers to give the subject that attention it deserves, and to "tell their experience," so that by the collecting of facts, and the thorough examination of these, a point may be reached whence the whole ground could be more intelligibly surveyed, and, if possible, a remedy provided.

In the mean time, growers cannot do better than propagate from healthy plants only, and, as far as in their power, provide all the conditions necessary to healthy growth; for no cure for the plague has yet been found. Sulphur or other ingredients, externally applied, can only be partial in their effects; as the seat of the disease is *in* as well as *on* the plant, and of course cannot be eradicated by mere outside applications. But perhaps it can be held in check by mixing recent-slacked lime with the mould in which they are potted, as well as dusting the plants occasionally with it over the foliage, and standing them in the greenhouse, where the roots will not be capriciously acted upon by fire-heat.

NEW HAVEN, CONN.

A. Veitch.

CHINESE YAM. — We see by our exchanges that an effort is now being made to call public attention anew to the cultivation of this vegetable. We do not object to this; for we wish to have the experiment fairly tried: but we must confess that we think the writer of the following has presented its claims in somewhat extravagant terms. He says (and we quote from a correspondent of "The Working Farmer") that "the crop, or produce of the root, is so great in China, that he does not venture to state it, but feels satisfied, that, when its culture shall have become fully understood (and surely there is none other that is more

simple), the cultivator may fairly calculate on eighteen hundred bushels to the acre, and probably on considerably more. When we consider the great excellence and highly nutritious character of this greatest of all esculents, its hardness, its easy culture, its freedom from all rot, its combination of nitrogen, the same nourishment as in meat, its immense productiveness, by which alone more than three hundred millions of people in the most densely-populated empire in the world have been sustained free from all famine through all the past ages of the world, can we refrain from rendering homage to the beneficent Father of the universe for the greatest alimentary boon that he has ever tendered to man ? ”

Fifteen years ago, we imported a few of the tubers, or bulbs, for trial. On opening the package, we were disappointed in the quantity and in the character of what had been sent us. The entire contents would not have filled a common wine-glass. In view of a product of twelve or fifteen hundred bushels to the acre, could it be that responsible seed-merchants were sending their patrons such samples for propagation ? Distributed thus, the yield of a few acres would have supplied the world. But we trenched, planted, cultivated to the letter, as directed, and succeeded in raising a few of what, at the time, were pronounced fine specimens. For several years, the cultivation was continued ; perhaps we should say, from motives of curiosity, as the yield was small, and the roots were so very easily broken, that scarcely one in ten was taken from the ground in a perfect condition. When cooked, the flesh had the rice-like taste and consistency it was said to possess ; but in our judgment it was inferior to that of the common potato, and, we think, would generally be so considered.

Up to the present time, its cultivation cannot be considered a success ; and we see little encouragement for the future, except in the introduction of new varieties, or the discovery of some better method of raising and harvesting.

F. B.

NEW VEGETABLE. — The *Phytolacca decandra*, mentioned in the February number of the Journal, is the common native pigeon-berry. It is an herbaceous perennial, and, in some localities, is found growing in great abundance. Though the young shoots, early in the season, are said to form an acceptable substitute for spinach or asparagus, we are not aware that the plant has ever been considered of much value as an esculent, and probably is nowhere in general use. The root, which attains a large size, possesses important medicinal properties.

The “ new vegetable ” to which the note calls attention is evidently the *P. esculenta*, or edible *phytolacca*. Ten years ago, through the kindness of the late M. Vilmorin of Paris, we received a sample of the seeds for trial. The plant is a hardy annual. The seeds were sown early in May, in rows two feet apart, and thinned to twelve or fifteen inches in the row. The foliage is similar to that of the species first mentioned ; but the plant is more slender, and, in its general character, shows little of the stocky, robust manner of growth seen in the common pigeon-berry. The yield is small, its cultivation is more difficult than that of asparagus or spinach, and it is inferior to these vegetables as a table-esculent.

Descriptions of both species, with directions for culture and use, will be found in “ The Field and Garden Vegetables of America.”

F. B.

FRUITS OF EUROPE AND AMERICA COMPARED. — Your readers must have been interested in the suggestive letter of your esteemed correspondent, Hon. Joseph S. Cabot, contained in the January number of your Journal. I wish to draw attention to points in his letter, which require to be received *cum grano salis*, as affecting our judgment of the comparative merits of the two continents. And, first, Mr. Cabot places the products of Massachusetts in one scale, and then piles into the other the successive fruits of England, of France, of Belgium, and of Germany, until our good Commonwealth can do nothing less than kick the beam. This can in no wise be said to be a comparison of the continents. We may admire the *pluck* of the man whose motto is, "The Hub against the Universe;" but this, plainly, is putting the case somewhat too strongly. And I submit, that we ask too much of Massachusetts in asking her to rival all the countries which are named. It would be a more equal comparison to include New York and all the intervening States to the south line of Virginia as an equal extent of territory. Passing from the consideration of the difference in soil, Mr. Cabot notices the extreme fluctuations of our climate, both in summer and in winter; the excessive heat and excessive cold; extreme dryness, followed by floods of rain; and contrasts this with the mild, equable, moist, but not wet climate of Europe; and he comes to the conclusion, *à priori*, that the *productus* of our "harsh and severe" climate must be inferior. At first sight, this seems to be a reasonable conclusion; and undoubtedly there is force in this view. There can be no doubt whatever that the extremes which we sometimes experience are often seriously injurious to our crops. All plants best develop their normal vigor upon the nearest approach to the mean temperature which they require, both during the season of growth and of rest. Some plants require tropical heat, and others demand a low temperature; but there are none which are benefited, except indirectly, by extreme fluctuations. We do know that the heat and drought of our summers and the extreme cold of our winters oftentimes kill our plants outright. Plainly this earth (and in this comprehensive embrace we are willing to include Massachusetts) is not a paradise of fruits, whatever may have been the original design. And yet it is by no means safe to conclude, that, for the purpose of raising fruit, a country having slight climatic variations is consequently superior to a country subject to changes; for Nature makes provision for her necessities. Oftentimes these provisions are so ample, — as, for example, in an abundance of clear sunlight, or in favoring periods for rest or for maturity, — that the balance is thrown clear over to the other side. It used to be said that a Northern man would suffer more in our Southern States than at home during winter; and for the simple reason, that, at the South, no provision was made against the cold. The house was open, the wood was green, the fireplace was smoky, and the discomfort was general. A temperature of ten or twenty degrees below zero is not conducive to animal vigor; and yet the vigor of our Northern people is equal, at least, to that of any other portion of the globe. We find similar facts in the vegetable kingdom. Take the fruits which will endure the cold of New England, and we do not conclude that they will show more vigor, and be more productive and superior, in the temperate and more equable climate of Virginia. You may say that our extremes, our storms and

winds, cannot possibly benefit the most important fruit of our country, the apple ; and yet we do know, as a fact, that there are conditions in our soil and climate which have enabled us to establish an enviable reputation for our crops of this fruit. We cannot, therefore, admit the premise, that the climate of Europe, when considered in all its elements, is superior; and consequently, of course, we cannot admit the inference which Mr. Cabot draws, that hardy fruits are therefore cultivated with more success and brought to greater perfection than with us.

So much for theory. Now, then, let us turn with him to the facts in the case. First he takes up the strawberry. This is a fruit of spring and early summer growth : it cannot bear the heat of July and August. We should expect it to develop magnificently under the slow and sure advance of an English spring. And Mr. Cabot compels us to a comparison in its best estate in a chosen locality. No one can deny that specimens of the English strawberry are superb, generally exceeding the American in size ; but do they exceed in productiveness ? The price in Covent-garden Market is not a test ; for we know that labor is cheap, and that the price of most vegetables is far below our own. Upon this question I can add nothing from my own observation ; but I have been interested in the statement of Mr. George S. Harwood of Newton, an intelligent and careful observer and enthusiastic cultivator. On a certain morning in June, Mr. Harwood tells me he made a hasty breakfast of *Triomphe de Gand* strawberries from his garden, and, on the same day, started for his old home near London. After a quick run, on the tenth day he ate the same variety at his father's table, just in its prime, and pronounced the fruit of his adopted State incomparably superior in quality. The slow advance to maturity, the humid atmosphere of England, had given large size and fine appearance ; but there was a lack of character and high flavor which Mr. Harwood well remembered as distinguishing his fruit at Newton. As an impartial witness, his opinion is encouraging, when he states, that, with equally careful culture, better results in quantity and quality attend the American than the European cultivator of the strawberry.

For good samples of the cherry, Mr. Cabot takes us over to Germany ; and it must be confessed that the beauty and abundance of these specimens quite exceed our own. We are in a transition period : we have grown the finest varieties in the greatest perfection and abundance. The curculio has come in upon us like a flood ; and the more tender kinds like *Black Tartarean* have been injured by the severity of an extreme winter a few years since. In this connection, and in reference to the minor fruits, such as apricots and plums, which, with the cherry, are seriously affected by insects, it is fair to consider that they are, as was said, in a transition state. Emphatically so is the whole country in reference to fruit-culture. We have cleared our forests, thereby not only greatly changing the character of our atmosphere, rendering ourselves subject to high winds, great aridity, and great extremes of heat and cold, but also greatly reducing the number of our feathered friends, whose work may seem insignificant, and yet by the ceasing of whose work the vast tribes of insect-life come swarming upon us. It is no trifling warfare to meet this myriad force of minute insect-

life ; yet it can be, it must be, it will be, done : to which consummation we invoke English sparrows, human laws, and human energies, until it is fully demonstrated that the evil is under control. When we do all this, when we plant belts of evergreens to do the work of protection, when we take the pains that our brethren do across the water, then we shall see that our climate will do its part.

For the peach, Mr. Cabot takes us to France. Without looking mournfully into the past, may we not go even as far as New Jersey for a comparison? Can it be denied that there are wide sections of our country which are the very home of the peach? The flavor is admitted to be superior.

In regard to apples and pears, Mr. Cabot expresses the opinion that they are grown with eminent success in both countries, and he is undecided as to an advantage on either side. Be it remembered, then, that he does not yield the palm even to Belgium.

Concerning the grape, Mr. Cabot is more emphatic, and does assert that the grapes of France "are vastly superior, and are raised with infinitely more success" than they can be in the United States, excepting on the Pacific coast. Herein we must differ point-blank. This is partially a difference of taste. I well remember, while under the training of my most esteemed friend some years since, the trial of any new native grape did not conduce to the symmetry and harmony, not to say beauty, of his facial expression ; indeed, I may say that indications of positive disgust were not infrequent. Now, I am differently constituted. I like the Isabella when in perfection. A perfect Iona is, to my taste, better than a Black Hamburg : it has character and aroma, which are wanting in the Hamburg. So is the Catawba exceedingly fine when perfectly ripe, such as we receive by tons upon tons from the Lake Shores every autumn, sometimes sold as low as fifty dollars per ton in Boston. Upon this point I leave the facts to speak for themselves.

In thus presuming to differ somewhat from the opinions of one whose good judgment I esteem so highly, it is proper to say that I have by no means the same advantage in forming a judgment ; yet I can but think that the ease with which he can command fine fruit in Europe with the aid of a well-filled purse, in contrast with the remembrance of care and sometimes disappointment in the production of former years, has had some influence in inducing him to think that the last is the better way.

After all, it is not a question which country will produce most fruit with the least labor. We must have fruit, and have it we will. There are great discouragements. Immense effort is required. We have fallen upon evil times, the soil is not virgin, insect-life is almost infinite, the winds have an almost unbroken sweep, the moisture-provoking and moisture-retaining forests have disappeared : but we accept the situation ; we fight it out on that line. Yea, we take courage, and thank God that it is as well as it is.

W. C. Strong.

THE AMERICAN POMOLOGICAL SOCIETY. — This society, after a protracted and tediously laborious session of two days and evenings at the Astor House, adjourned late on Thursday evening; having completed the task of revising the extensive catalogue of American apples, pears, peaches, and other fruits. There was a full attendance of members, made up of the most distinguished pomologists of the United States. Among the number we noticed P. Barry, Charles Downing, George Ellwanger, Prof. Thurber, Samuel Parsons, and Robert Parsons, of New York; A. S. Fuller, Dr. Trimble, William Parry, and P. T. Quinn, of New Jersey; F. Hoopes, Thomas Meehan, J. E. Mitchell, and J. Knox, of Connecticut; F. R. Elliott, W. Fritz, and S. E. Todd, of Ohio; W. Saunders and John Saul of District of Columbia; Hon. M. P. Wilder, C. M. Hovey, Robert Manning, and J. F. C. Hyde, of Massachusetts.

It is a rare occurrence that such a body of intelligent gentlemen, both practically and theoretically, convene for the transaction of professional business, where their deliberations are characterized by more harmony and genial feeling than appeared at the sessions of this association.

Hon. Marshall P. Wilder of Boston, Mass., who opened the session with an appropriate address, setting forth the importance of the meeting, and who presided with cheerful dignity, still retains his position as president, with Mr. F. R. Elliott of Cleveland, O., as secretary. The readiness with which the representatives from the different States engaged in the proposed task before them, and the commendable ability and practical intelligence which were brought into requisition on the occasion, afforded a most satisfactory assurance that these gentlemen, who came so far, at no small expense pecuniarily, and were willing to appropriate two days and two long evenings to the accomplishment of so irksome a task, are prompted to the performance of a great national benefaction by something more than mercenary considerations.

During their deliberations, the committees and every member from various States were provided with catalogues of fruit. Each variety was considered separately, and inquiries were raised as to the failures or satisfactory success with which that variety has been cultivated in every locality. Then the suggestions offered both for and against a given variety were carefully considered; and, if the fruit seemed to have been cultivated with satisfactory success, the name was retained in the catalogue: on the contrary, if the evidence appeared to be so much against a given variety as not to be likely to warrant its cultivation, the fact was properly indicated in the catalogue. An untold amount of practical experience and intelligence was manifested during the deliberations of this respected body of American pomologists. The Old World, with all her wisdom in pomological science, cannot boast of more practical ability among her fruit-growers than is manifest among the plain and unassuming members of this association.

Their table was spread with various specimens of fine fruit during their sessions; and their deliberations in reviewing and revising the catalogue are to be submitted to the consideration of the convention of the association in September next, at their meeting in Philadelphia.

The president, before adjournment, in a few appropriate remarks, congratu-

lated the members of the association upon their commendable enthusiasm in this laudable and national enterprise, upon the harmony and good feeling that had characterized their deliberations, and upon the ability, intelligence, and cheerfulness with which these arduous duties had been performed. Thus ended the interesting convention of the American Pomological Association of February, 1869.

BEES *versus* RASPBERRIES. — We think the statement of an intelligent bee-raiser, that “the raspberry will not succeed where bees are kept, for the reason that the intermeddling of these insects with the pollen of the flower is decidedly injurious, and prevents the fruit from reaching perfection,” needs confirmation. We have grown this fruit for the past twenty years, and in a common enclosure, within a few yards of the plants, have uniformly kept the common hive-bee; the number of colonies varying from five to ten in different seasons. Referring to our record, we find that in no one of these years has the crop proved a *total* failure. In seventeen of the years, the crop was *good*; and, in three instances, the season of fruit was shortened by dry weather. We recommend “G. G.” to retain his bees, and continue the cultivation of his raspberries, confident that there is no good reason for relinquishing either. F. B.

MADRESFIELD-COURT BLACK MUSCAT GRAPE. — This grape is one worthy of the warmest commendation, both in regard to its appearance and quality. It was raised by Mr. Cox, gardener to the Earl of Beauchamp, at Madresfield Court, Great Malvern, some half-dozen years since; and was selected as the best of a batch of seedlings obtained from the Muscat of Alexandria and the Black Alicante, intercrossed in both directions. It proves to be a grape of excellent quality, setting its fruit as freely as the Black Hamburg, than which it takes about a fortnight longer to ripen.

The vine is of a robust constitution, producing short-jointed wood, with prominent pointed eyes. The fruit-clusters are large, regularly tapered, and handsomely shouldered. The berries are large, of a longish oval-shape; like those of the Muscat, perfectly black; and covered, like those of the Alicante, with a fine, thick bloom. They are attached by stout, warted foot-stalks. Their skin is tough; and their flesh is firm, juicy, and rich, with a fine, luscious, Muscat flavor. The leaves are bristly, deeply lobed, and serrated with reddish stalks and midribs.

With such qualities as those just indicated, it is not surprising that the Madresfield-Court Grape should have won a first-class certificate when exhibited before the Fruit Committee in August, 1867; and that it should have been designated as a splendid new grape. In truth, it comes in as a very useful auxiliary to the few thoroughly good grapes already in cultivation, nearly if not quite equalling the Muscat of Alexandria in quality, and indicating, by its stout, firm foot-stalks, and leathery skin, that it will rank amongst those especially useful kinds which hang well after they have reached the ripening stage.—
Florist and Pomologist.

PALMS AS DECORATIVE PLANTS.—We copy from “The Floral World” the following article upon the best palms for decorative purposes. They are thus extensively grown in Europe, and serve a most admirable purpose.

“Were we to name all that are really good and distinct, we should not only take up more space than we can reasonably hope to be spared, but we should confuse the readers, and make them think they would require a house as large as the Palm House at Kew, or a miniature Crystal Palace, to grow them in. We do not want to frighten our readers; but we do want to encourage them to take these plants in hand boldly, and thus add a large amount of grace and beauty to their collections, where much monotony at present prevails. It is not necessary that they should have large and lofty houses; for, though many of the palms attain an immense height in their native countries, they are very slow growing when subjected to a lower temperature in this country.



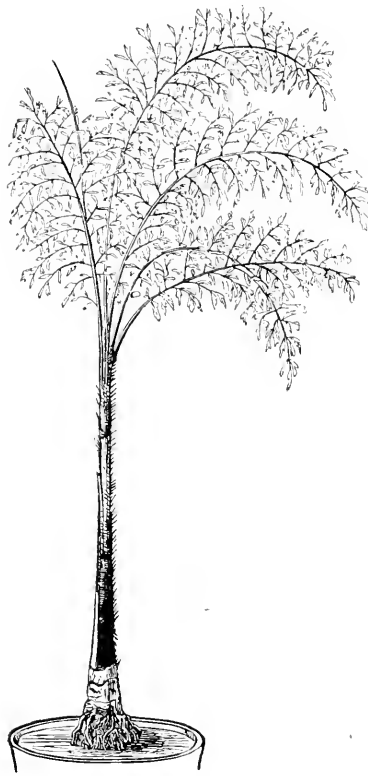
ARECA RUBRA.

“To take the kinds which require a stove temperature, first, we will just observe, that nearly all of those which we shall name will suffer no injury if placed in the conservatory from the end of June until September. It is not safe to place them there earlier than June; for, if they are subjected to a low temperature before the new growth is completed, the fronds will be poor and stunted, and the beauty of the plants materially interfered with. Another consideration which ought not to be lost sight of in bringing them into the conservatory is to guard against exposing the plants to cold draughts, more particularly when they are first brought there. We are well aware of the difficulty in forming a select collection, when there are so many good ones, so as not to leave out any of the best kinds: but, as we must begin somewhere, we will make a start with the cabbage-palms; and first on our list we will place

“*Areca aurea* and *A. rubra*, both strong-growing kinds, with long pinnate fronds, which attain to eight or ten feet in length in full-grown specimens, but particularly beautiful when young. We have some good things amongst the —

“*Calamus*, an interesting genus; and first on our list we shall place the lovely *C. asperimus*, and then follows the equally fine *C. elegans*.

“*Caryota sobolifera* is a grand palm where there is plenty of room: it has fine spreading and graceful foliage, with small leaflets; being very similar in shape to, though much larger than, *Adiantum trapeziforme*. *C. urens* is a stronger grower than the preceding, but somewhat like it.



CARYOTA SOBOLIFERA.

“The *Cocos*, or cocoanut genus, furnishes us with some species that we must not on any account pass over. First on the list we must place the beautiful *C. Weddelliana*; for there is not another in the whole family that can beat it where a small-growing plant is required. The fronds are rather small, and remarkably graceful; being boldly pinnate and intensely glossy. With this plant in good condition, no difficulty need be experienced in finding a centre-decoration for the dinner-table: indeed, we know of nothing which presents such a thoroughly beautiful appearance in this capacity. It is known under two names; the other being *Leopoldiana pulchra*.

“Another good species, and equally beautiful, though of a totally different magnitude, is the magnificent *C. nucifera*, the true ‘cocoanut-palm.’ All that it



LIVISTONIA OLIVÆFORMIS.

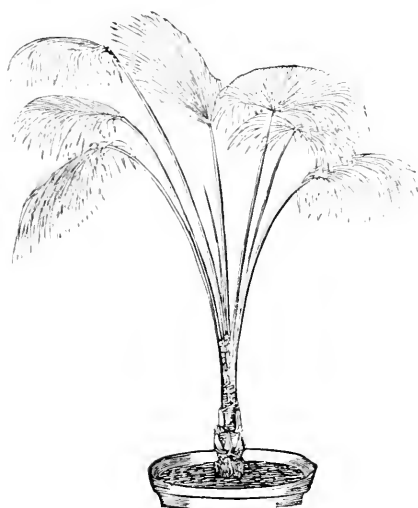
requires is plenty of room to develop its beauty. And it is one of the easiest to obtain ; for there is no outlay necessary, beyond speculating a few pence upon



LIVISTONIA SUBGLOBOSUS.

a cocoanut; and, by treating it as recommended in the chapter upon sowing seeds, you will have a plant in four or five years' time worth nearly as many guineas

as you paid pence for the nut. We are not speaking at random ; for at the present moment we know a plant, raised from a nut planted four years back, that stands over six feet high, and for which the proprietor would not take less than five guineas in the ordinary way of trade. It is not in the possession of a private grower, who could set any fancy price upon a plant because he had no wish to part with it. We have also seen two plants, raised by a private grower in the same space of time, that now stand twelve feet high, with immense fronds. We have mentioned this rather fully, to enable any one to see how easy and simple these plants are to cultivate, and with what a very small outlay any one can begin, if he be content to commence in a small way. *C. coronata* and *C. Peruviana* are both good kinds.



THRINAX PARVIFLORA.

“ *Demonorops plumosa* is one of the most elegant palms grown. A small grower. The leaves are a fine deep green, handsomely plumed. *Eutrype edulis* is especially good. It grows with a slender stem, and from the summit it throws out on all sides beautiful dark-green arching fronds. Whether twenty inches or twenty feet high, this is one of the very best.

“ *Livistonia oliviformis* and *L. subglobosus* are two of the grandest fan-palms grown : too much cannot be said in their favor, and they are both cheap.

“ *Phœnicorophorum Sechellarum* is rather a rare but extremely beautiful palm, from the Island of Seychelles. The leaves are dark green, spotted with bright orange ; and the stem and leaf-stalks are armed with long needle-shaped spines : a very distinct kind.

“ *Thrinax* presents us with several splendid species. *T. argentea*, *Martii*, *elegans*, and *radiata*, are all first-class.

“ *Verschaffeltia splendida*. — We will not go so far as to say that this is the

most beautiful palm grown, for each has its own style of beauty; but we can say that it is one of the grandest and loveliest of the whole family. The leaves are bright green, oval shape, and will measure upon a moderate specimen four feet long by three broad. However select the collection may be, this ought to be one, it is so very distinct from the others.



ACANTHOPHÆNIX CRINITA.

“*Acanthophanix crinita* is one of the grandest stove-palms known; quite surpasses the best *Thrinax* in elegance of outline. The fronds are pinnate and fern-like, gracefully sickle-shaped and glossy; and the stem is beset with dark spines. Plants of this are at present very scarce and dear; but Messrs. Hooper & Co. of Covent Garden offer fresh seeds at a florin each; and it would be an inter-

esting speculation for any one fond of such amusement to take half a dozen or more seeds in hand, and have patience with them.

“ Amongst many others which will grow and do well in any greenhouse from which the frost is kept out, select at random from the following list : —

“ *Areca Bausonii* and *A. sapida*. — Both are handsome species of the cabbage-palm, which can be depended upon for this treatment.

“ *Brahea calcarea* and *dulcis* are two beautiful palms with large fan-shaped leaves, from Mexico.

“ *Chamærops Fortunci* is an extremely beautiful species ; and, in fact, so are *Ghiesbreghtii humilis* and *tomentosa* : they are all first-class, and particularly adapted for small houses, and are, without question, the hardiest of the family.

“ *Corypha australis* is a beautiful fan-palm ; one of the best for the conservatory. *Chamædorea elegans*, *C. ernesti augusti*, and *C. Verschaffeltiana*, must not be forgotten ; for they are all first-rate.



CORYPHA AUSTRALIS.

“ *Latania Bourbonica* is the hardiest of the genus, and at the same time one of the most beautiful. Nothing can exceed the beauty of its spreading fan-shaped leaves. Without question, it might be in every collection ; and the price of small plants is no more than that of a Tom Thumb geranium ! The date-palms furnish us with several splendid species, which add a grace and beauty to our conservatories not attainable with the ordinary greenhouse-plants alone.

“ *Phoenix dactylifera*, *reclinata*, *sylvestris*, and *tenuis* are four of the best of this section. There are numbers of others equally desirable : but we fear that we have already taken up too much space ; therefore we will name but one more, and that shall be the charming

“ *Thrinax parviflora*. — Though the sketch is correct enough, it fails to convey a full idea of its extreme beauty.

“ Perhaps enough has been said about the value of palms for table-decoration ; but we cannot resist adding a word on their admirable fitness for filling ornamental pots, vases, épergnes, &c., — things which, if people possess, they like to use, but which, where there no proper plants for them, get sadly misused.”

TRANSPLANTING RASPBERRIES AND BLACKBERRIES. — Nursery-men, of course, understand a great many arts that are unknown to ordinary cultivators: hence, in giving some facts that may benefit the latter class, I do it without any reference to the instruction of the former. However old my suggestions may be, I only know that they are not generally practised by the mass of fruit-growers; and if I can show that they are not difficult to adopt, and that it is excellent economy to do so, I may accomplish some good.

Most persons who attempt to cultivate such raspberries as propagate by suckers allow the suckers to stand during the current season, under the mistaken impression that they cannot be safely removed until the season's growth is completed. Then they are transplanted, cut back, and must grow another season before fruiting. The result is, that two years elapse from the time the young plant appears before it fruits.

But there is a better way than this. In the spring, when the sucker appears an inch or two above ground, take a round-pointed shovel, and cut it out, and carry it, with the adhering earth, to the place where you desire it to grow. The ground and the hole should be previously prepared, the latter just about large enough to admit the ball of earth without allowing it to fall to pieces: slip it from the shovel carefully, draw the loose earth up with your foot, press it down slightly, and the work is done. In general, the young plant will not wilt, even if the weather is warm, and will continue to grow as if nothing had happened to it. Perhaps one in ten may wilt. But it is not an alarming symptom at all: it will almost always recover at night. Occasionally, the extremity of a plant may wither after some days; but even that is not a dangerous indication: cut it off, and, in a week or so, three or four branches will start from near the earth, and you will usually have a better and more symmetrical plant than if the single stem had gone on growing and thrown out branches near the top. In fact, though I have not yet generally practised it, I am prepared to recommend that every plant — of the Philadelphia at least — be pinched or broken off at the distance of a foot or less from the ground. Probably it would be best to do this at transplanting; certainly, if the plant is six inches or more in length. It induces the growth of side-branches from near the base of the plant, makes more wood for fruiting, and the plant is better able to withstand high winds, exactly as is the case with a pyramidal tree.

My experience with raspberry-plants grown from suckers is confined almost exclusively to the Philadelphia variety; but the Clark, though a stronger grower, seems to be similar in its habits, and the same treatment will no doubt answer for it.

My experience, too, in transplanting, has been mainly in the mode explained, because I considered that *certain* of success; while the loosening of the plants from the earth about them, and the exposure of their tender roots to the air, seemed to be dangerous. But, occasionally, a plant will be shaken loose in spite of the utmost care; these I always plant: and the result, with an occasional experiment in the same direction, leads me to conclude, that, if there is no unnecessary exposure of the roots to the air, no serious danger need be apprehended. Keep the roots moist by plunging them into water or mud, or by cov-

ering with moist earth; waste no time in getting them to their places; cut or strip off most of the foliage, and, ordinarily, there will be no serious losses. The gain of this mode over the first mentioned is in the saving of labor and time, as the carrying of a ball of earth with each plant, if only for a few rods, will not be an amusement after a few hours.

Blackberries can be transplanted the same way with perfect success. With due attention at the time of starting a plantation of either of these fruits, the labor of carrying the young plants any great distance may be avoided, even with a ball of earth adhering. It is customary to set them about four feet apart in the rows, and the rows from six to eight feet apart. At eight by four, an acre will require thirteen hundred and sixty-one plants. If the cultivator, for any cause, desired to start an acre from one-fourth of this number, he would need only to scatter his plants over the whole acre, but at regular distances, so that the vacancies and the plants would be duly proportioned. Then the labor of carrying the balls of earth long distances would be avoided, as well as the possible risks of the other system.

Raspberries and blackberries transplanted in this way will bear a fair crop the *second* year; that is, the second year of their existence. Treated in the usual mode, they never bear until the third year; and, so far as I can see, are no better.

Philip Snyder.

VINELAND, N. J., 1869.

MUSHROOM-CULTURE. — I have hesitated about writing respecting mushroom-culture, so much has been written already; but my plan is so simple and successful, that I must state it and the results.

The place in which the mushrooms are grown was originally the stoke-hole for two of Weeks's tubular boilers, which are now removed some distance from the houses; and the sides of the underground stoke-hole have been converted into beds for mushrooms, the end boarded up for sea-kale. There are two six-inch flow and return pipes from the boilers, forty yards off, to heat a block of seven houses; and these two pipes pass through the old stoke-hole under the arched roof.

The first bed was made Oct. 5 from droppings collected from the stable, which had been placed in an open shed, and kept turned until there was a sufficient quantity. They were then put in the bed, well beaten down, spawned when the heat was on the decline (at eighty-five degrees), and soiled with two inches of stiff yellow loam. The first dish was gathered Nov. 10; and since that time I have had thirty-one dozen from a bed nine feet long, three feet wide, and ten inches deep. I have just gathered five dozen more. There are a hundred and ten, averaging three inches across the top, fit to be taken; and the bed is completely white with small mushrooms the size of peas and upwards.

The second bed, spawned Nov. 5, is showing the little globules all over. I have made two more beds for successions, with room for eight more of the same-sized beds: so there will be no lack of mushrooms throughout the winter. Of the hundred and ten, I have cut six which weighed nine ounces. — *English Journal of Horticulture.*

BIRDS, AND THEIR USES. — Baron Von Tschudi, the well-known Swiss naturalist, says, "Without birds, successful agriculture is impossible. They annihilate in a few months a greater number of destructive insects than human hands can accomplish in the same number of years. Amongst the most useful birds for this purpose may be classed the swallow, wren, robin-redbreast, sparrow, and finch." Tschudi tested a titmouse upon rose-bushes of his neighbor, and rid the same in a few hours of innumerable lice. A robin-redbreast killed in the neighborhood eight hundred flies in an hour. A pair of night-swallows destroyed in fifteen minutes an immense swarm of gnats. A pair of wrens flew thirty-six times in an hour with insects in their bills to their nests. He considers the sparrow very important. A pair of them in a single day carry three hundred worms or caterpillars to their nests, — certainly a good compensation for the few cherries which they pluck from the trees. The generality of small birds carry to their young ones, during the feeding-period, nothing but insects, worms, snails, spiders, &c. Sufficient interest should be manifested by all to prevent the discharge of fire-arms in the vicinity of orchards, vineyards, and flower-gardens, as thereby the useful birds become frightened.

DIGGING BETWIXT THE ROWS OF STRAWBERRY-PLANTS. — There is a diversity of opinion among gardeners as to the injury or benefit which the plant may derive from deep digging. The late Mr. Keen of Isleworth, the raiser of the well-known variety, Keen's Seedling, was an advocate for shallow digging. It is just possible that his soil was rather light, and that, as the strawberry-plant delights to grow in a tenacious or good loamy soil, he objected to deep digging in order to avoid loosening the subsoil. I should be willing to abide by his authority on the subject, were it not that in the neighborhood of Enfield, from whence the London markets are supplied annually with large quantities of fruit, I have observed that quite the opposite of Mr. Keen's practice is adopted: the ground betwixt the rows is deeply dug, and allowed to remain rather rough, so that the soil thus disturbed may derive benefit from the influence of the atmosphere in penetrating it. Besides this, the constant treading betwixt the rows makes it desirable, that, once a year, the soil should be dug to some depth between the rows, that they may derive nourishment from the manure which may be applied, and to admit of the spring and early summer rains, or any water that it is necessary should be given to them during their bearing-season. — *Gardener's Magazine*.

WHAT PEARS SHALL WE PLANT? — For more than twenty years, we have asked this question; have read books and magazines, and reports of fruit-committees: but the last winter's and summer's sad experience has left the question nearly as far from being satisfactorily answered as at first.

Once we thought if a pear was sweet, melting, or buttery, and the other epithets so tempting as to make the mouth water, and the aroma almost perceptible, that was *the* kind; but that day is past. We *want* pears; and if we can have them in reasonable abundance, and the trees are hardy and thrifty, we are satisfied if they are not quite of the sublimest flavor. But last season's expe-

rience and loss was not without its benefit ; for we believe we have found a few varieties that were unharmed by winter's cold and the summer's blight or mildew. At least, they were here ; and we perhaps may assist the good cause by naming those most hardy.

Our Henkel trees were one mass of rich green foliage ; and were really an ornament, even without fruit. The Merriam is also a very thrifty grower, and very hardy ; also the Abbott, which bore a good crop for a young tree. The Vicar of Winkfield was unaffected by winter's cold, or dropping of the leaves in summer. The Belle Lucrative held its leaves, and bore a good crop. We have found the Fulton to be a profitable variety, a moderate grower, and healthy. Sheldon is also a very desirable sort, and can be relied upon for growth and bearing-qualities. Our Buffam trees grew nicely, and the foliage was beautiful. Doyenné d'Été succeeds well.

We have a few trees of a sort called the "European Honey," which does not appear to be common, but is an early and regular bearer ; fruit sweet, rich, but rather coarse : it is a good grower, and hardy. Several trees of the Bartlett and other varieties were killed, or so injured that they will scarcely recover : they threw out yellow and sickly leaves, that fell off early in autumn. Old fruit-growers near Brooklyn aver that the "Scooter," a baking-pear, a wonderfully productive variety, will bring the most money.

I. H.

OLD WESTBURY, L.I.

[*Remarks.* — Experience is the best teacher ; and it is only after an actual trial that we can fully decide what varieties of any fruit will succeed best in certain soils and locations. The Henkel is a fair pear, but not much cultivated. The Merriam is one of the most profitable market-sorts, though not of first quality : its golden-russet color, when ripe, will cause it to sell more readily than better pears that are not so attractive in appearance. The Abbott is a variety of first quality, but rather small for market. The Vicar of Winkfield is a good variety for cooking-purposes, and, under very favorable circumstances, will prove a tolerable dessert-fruit. The Belle Lucrative is one of the very best for home use alone ; for, though of excellent quality, its color is never attractive, and it is always comparatively unsalable.

The Fulton is a very productive variety of fair quality, which sells readily : the tree is not generally healthy or thrifty. The chances are, unless the fruit is thinned, that the tree will bear itself to death. The Sheldon is a fruit of the highest quality, of good size and appearance : the tree is a little tender, and the fruit quite likely to crack. The Buffam is another of those varieties, which, though not of superior quality, are yet very profitable to grow for market ; very productive ; fruit fair and handsome. The Doyenné d'Été is a pleasant little summer pear ; but a single tree in an orchard would be quite enough. Of the "European Honey" and "Scooter" we know nothing ; nor do we find any such names in the books. We conclude these are local names given to some old and well-known varieties. We should be pleased to hear from our friends in every part of the country, giving us the results of their observation and experience in the cultivation of the various fruits. — *Eds.*]

SHADING BY WHITENING THE GLASS.—The details are probably these: We have found no mode more simple than skim-milk, with a little powdered whitening mixed with it (say as much whitening as the size of a walnut), reduced to a fine powder, and thoroughly mixed with two or three quarts of milk. We would advise those trying the scheme to do a piece of glass first. Let it dry, and add to the milk or whitening as they require less or more shading. If it be put on quickly and thinly by one man with a brush, and another follow with a dry duster-brush, merely daubing it quickly with the points of the dry brush, the shading will have the appearance of shaded ground glass, and look neat.

W. F. RADCLYFFE, one of the best English authorities on roses, recommends the following thirteen roses for pegging down on a lawn. They are very free bloomers. For this purpose, they must be plants with pliable wood. Stiff, erect growers are not so suitable. *Pink*, — Jules Margottin; *Maroon*, — Camille Bernardin; *Vermilion*, — Maurice Bernardin; *White*, — Baronne de Maynard, most beautiful; *Yellow*, — Céline Forestier; it must not be cut much, and requires great room; *Rose-color*, — Comte de Nanteuil; *Red*, — Sanateur Vaisse; *Scarlet-Crimson*, — Baronne Adolphe de Rothschild (not Baron), beautiful; *Purple Crimson, dark shaded*, — Duc de Cazes; *Purplish or Brilliant Crimson*, — Maréchal Vaillant; *Waxy Flesh*, — Mrs. Bosanquet; *Blush*, — Marguerite de St. Amand; *Rosy Crimson*, — Lady Suffield. From these thirteen roses, selection is safe.

PLANTS TO FLOWER IN A GREENHOUSE FROM OCTOBER TO MAY.—In October, chrysanthemums will be coming on, and they are well supplemented by primulas; in addition to which, bulbs, such as hyacinths, tulips, narcissus, and crocuses, will tend to make the house gay. In March and April, cinerarias will be in fine bloom, followed by calceolarias in May, and then by pelargoniums. These are indispensable for greenhouse decoration. You should also have a plant or two of *Deutzia gracilis* and *Dielytra spectabilis*, which, though hardy, are very handsome. Of greenhouse-plants proper, we may name *Camellia alba plena* and *fimbriata*, both white; *Mrs. Abbey Wilder*, white, striped carmine; *La Pace*, white, striped and shaded scarlet; *Storyi*, rosy pink; and *Perfection*, red. Azaleas, — *Étoile de Gand*, light salmon, white margin; *Flower of the Day*, white, striped rose; *Gem*, crimson scarlet; *Mars*, orange scarlet; *Extranei*, violet rose; and *Gledstanesi formosa*, white, striped, and blotched with scarlet. Epacris the *Bride*, white; and *Hyacinthiflora*, rosy scarlet. Also *Correa Brilliant*, scarlet; *Acacia Drummondii*, *A. armata*, *A. oleifolia* elegans, and *A. longiflora* *magnifica*, all yellow; *Boronia Drummondii*, pink; *Chorozema cordatum* *splendens*, orange and brown; *Cyclamen persicum*, white, rose, and red varieties; *Cypripedium insigne*, green, tipped with white; *Cytisus racemosus*, yellow; *Eriostemon intermedium*, lilac; *Imantophyllum miniatum*, orange scarlet; *Leschenaultia formosa*, orange scarlet; *Luculia gratissima*, lilac; *Monochætum ensiferum*, rosy purple; *Rhododendron jasminiflorum*, waxy white; and *Vallota purpurea*, scarlet.

NEW HYBRIDS OF COLEUS. — Mr. Bause, the foreman in the plant-department at Chiswick, has been very successful in an attempt to produce hybrids of the Coleus family. A considerable number has been raised, the materials operated on being the following: *C. Verschaffeltii*, as the seed-bearing parent, was fertilized by *C. Veitchii*, by *C. Gibsoni*, and by *C. Blumei*. The novel forms which have been produced range in two series: the one having plane crenated leaves, as in *C. Veitchii*; and the other having inciso-dentate frilled leaves, as in *C. Verschaffeltii*. The following selected kinds have been recently offered for sale by auction, and realized upwards of £390:—

Plane-leaved Series. — *C. Berkeleyi* (*Verschaffeltii* × *Veitchii*): leaves rich velvety chocolate-purple, the tips of the crenatures only being green. A beautiful and richly-colored plant, in which nearly the whole surface is of a velvety purple hue, which is well displayed, from the flatness of the foliage.

C. Marshallii (*Verschaffeltii* × *Veitchii*): leaves rich chocolate-purple, the base of the midrib and the crenatures green, so as just to form a narrow green margin. This has the green edge more apparent than in *C. Berkeleyi*.

C. Saundersii (*Verschaffeltii* × *Veitchii*): leaves deep chocolate-purple in the centre, somewhat mottled, and of a pale bronzy tint towards the edge, which has a broadish band of green broken through with purplish bronzy reticulations. The broader mottled green and bronze margin brings this near to *C. Veitchii*; to which it is, however, far superior in beauty.

C. Dixii (*Verschaffeltii* × *Veitchii*): leaves dark chocolate-purple in the centre, feathering out through the broadish bright green margin, which is nearly an inch wide, the crenatures narrowly purple-edged. A very brightly-colored and effective sort, from the strong contrast between the rich green and purple.

C. Ruckeri (*Verschaffeltii* × *Gibsoni*): leaves deep purple throughout on both surfaces. A fine, sturdy-growing, dark-leaved sort, having very much the color of *Perilla nankinensis*.

C. Murrayi (*Verschaffeltii* × *Gibsoni*): leaves green, pinnately marked along the principal veins with bars of dark purple, which sometimes coalesce; the rest of the surface showing through from beneath the purple reticulations, which are also evenly and strongly marked on the under surface. A more evenly and more fully colored form of *C. Gibsoni*.

Frilled-leaved Series. — *C. Bausei* (*Verschaffeltii* × *Veitchii*): leaves of a rich velvety chocolate-purple, green towards the base and at the extreme margin. A fine, distinct-looking plant, richly colored; the dark color nicely relieved by the slight green margin, which lightens up the whole plant.

C. Scottii (*Verschaffeltii* × *Gibsoni*): leaves bright green, everywhere traversed by deep purple veins, here and there coalescing into blotches; the under surface similarly marked, but brighter. A very distinct and elegant plant, having the markings of a deep tint of purple, but well relieved by the green spaces between the dark-colored reticulations.

C. Clarkei (*Verschaffeltii* × *Gibsoni*): leaves green above, with the edges of the teeth purple, and showing through the dark purple venation with which the under surface is almost everywhere marked. One of the darker-tinted sorts, having the markings of the reticulated character.

C. Batemanii (Verschaffeltii \times Gibsoni): leaves deep purple above and beneath, here and there very slightly mottled with green. This variety may be regarded as the incised counterpart of *C. Ruckeri*, having almost self-colored deep purple leaves.

C. Wilsoni (Verschaffeltii \times Veitchii): leaves of a rich velvety chocolate, shaded with purple, the base of the leaf and the teeth slightly tipped with the same color. A very elegant mottled sort.

C. Reevesii (Verschaffeltii \times Blumei): leaves green, mottled with bronze and purple, sparingly dotted towards the base, and laid on in close reticulations and patches towards the edge, the centre being deeply tinted and entirely of a dark color, and the teeth green, with narrow purple edges.

THE following notes on roses are communicated to "The Cottage Gardener" by W. F. Radclyffe:—

COMPOST FOR POTTED ROSES.—The best compost for pot-roses is one-third each of rich stiff clay, sand, or fine ashes, and decayed black dung. Let me add, that pelargoniums, fuchsias, roses, strawberries, hollyhocks, and dahlias, all like cow-dung. For the last two, it is, perhaps, the best of manures. It contains more potash than any other animal manure: hence, as potash is the grand constituent of a strawberry, it is also excellent for that delicious fruit. In a word, I believe it to be one of the best of manures. The same may be said of soot, which contains nitrogen and carbon. For pot-roses, use a skewer to make holes in the soil to let in the water.

LIST OF SUPERIOR ROSES.—I presume good growers, hardy roses, free bloomers, and constant bloomers, are desired. *Yellow*.—Gloire de Dijon, Céline Forestier, and Triomphe de Rennes. These roses should have plenty of room, and do not require to be cut much. *Blush*.—Marguerite de St. Amand, La France (new), Caroline de Sansal, Mlle. Emile Boyau, Madame Knorr; and, for the autumn, Souvenir de Malmaison. *Brilliant Crimson*.—Charles Lefebvre, Alfred Colomb, the two best; Senateur Vaisse, Lord Macaulay, Lady Suffield, Maurice Bernardin, Duchesse de Caylus, Madame Victor Verdier, Lord Clyde, Madame Boutin, Maréchal Vaillant, Mlle. Annie Wood, fine, but shows an eye; Madame Julie Daran, Leopold Premier, George Prince, Gabriel de Peyronny, and Dr. Spitzer. *Pale Dove Pink*.—Baron Gonella. *Rosy Pink*.—Jules Margottin. *White*.—Baronne de Maynard, Madame Freeman, Marguerite Bonnet (fleshy white), Madame Alfred de Rougemont. *Dark Crimson*.—Pierre Notting (a grand rose), Vicomte Vigier, Duc de Cazes, Souvenir de Comte Cavour, Eugène Verdier, Baronne Pelletan de Kinkelin. *Maroon*.—Prince Camille de Rohan, Souvenir de Dr. Jamain, Empereur de Maroc. *Rose Color*.—Baronne Prevost, Comte de Nanteuil, Thorin (new), La Duchesse de Morny, Charles Rouillard, John Hopper, the best, one of the finest roses in England. Its color is crimson rose. *Pink*.—Comtesse Cécile de Chabillant. *Waxy Flesh*.—Mrs. Bosanquet. I conclude with a few words on new roses. Alfred Colomb is the finest by far. Horace Vernet and Antoine Ducher are excellent growers with fine foliage: they are large and fine, with deep petals; but they have not yet been full enough. Fisher Holmes is a nice red rose.

Charles Verdier is distinct, and I think it will be good. Mlle. Marguerite Dombrain, when not tucked in the side, is extra fine. Princess Mary of Cambridge is an improved Auguste Mie, and, taken at all points, is the best rose of light color, as Alfred Colomb is the best of the rich colors, that has come out lately.

EPIPHYLLUM TRUNCATUM AND ITS VARIETIES.—The *Epiphyllum truncatum* has always, since its first introduction from Brazil in 1818, received the attention of cultivators; and many a hoary-headed son of Adam has pointed with pride to the big cactus at the end of the vinery, now all ablaze with blossom, that had been grafted by himself some twenty years before. At intervals a few others were obtained, as *E. truncatum bicolor*, *Bridgesii*, and *rubrotinctum*; and in 1839 the lovely *E. Russellianum* made its appearance, also from Brazil. This latter, although recorded as a variety of *E. truncatum*, is certainly a distinct species; for, while the varieties of *E. truncatum* usually flower in November and December, the natural blooming-period for *E. Russellianum* is the month of May. There are, besides, other differences,—the petals being evenly reflexed, the stamens straight, and the seed-vessel angular; while, in *E. truncatum*, the flower is ringent, the stamens curved, and the seed-vessel roundish. They are among the most useful of winter-blooming plants, whether for the greenhouse, conservatory, or table-decoration; and that they have not hitherto received that attention they so justly merit, there can be no question. Plants raised from cuttings grow and flower tolerably well; but they do infinitely better when grafted on stems from six inches up to eighteen inches or so in height. This, moreover, allows the flowers to hang in their natural way, and also to show themselves to the best advantage. The compost most suitable for them is good pasture-loam and sandy peat, in about equal parts; adding a moderate proportion of leaf-mould and of brick-rubble. Pot them when they begin to grow after flowering; drain well, and do not over-pot. Place them in a brisk heat till they have made their growth; afterwards in a lower temperature, and in a dryer house to harden; and finally expose them to the full sun, to induce them to set their buds. They will begin to bloom in November; and, by moving a few at a time into a warmer house, the blooming-season may be continued till the spring,—the *Russellianum* hybrids being used to come in after those of the *truncatum* group are past.

It would be an interesting experiment for amateurs, and others having time at their disposal, to endeavor to obtain a hybrid between *E. truncatum* and *Cereus flagelliformis*, as it is more than probable that a distinct and useful progeny would be the result. In order to accomplish this, the former would need retarding; as *C. flagelliformis* does not usually flower till late in the spring, or in the early summer months. Seedling-plants flower in three years from the time of sowing the seed.—*Florist*.

THE FRENCH VINEYARDS.—A tourist who has just paid a visit to the vineyards in the environs of Macon gives the most favorable accounts of the approaching harvest. The neighborhood of Brouilly, among others, holds out the brightest hopes. The grapes have almost reached their full size; but they have hardly yet begun to turn color. The wine-growers are in high spirits; and if slight rains, alternating with hot weather, continue to prevail as for some time past, there is every reason to expect a superior yield, both in quantity and quality, to that of last year. Advices from Placé (Rhône) announce that the famous wine-growing district of Hant-Beaujolais is equally promising: so that we hope to have plenty of good wine in the market this year at a low price.—*Country Life.*

LONICERA AUREO-RETICULATA.—This plant has flowered this year in two gardens near Chichester, early in June. Its trusses are said to resemble those of *L. flexuosa*; while its fragrance is so great, that it may be perceived for four to five yards around the arches over which it grew.

A NEW MULCH FOR THE GRAPE.—I find leached ashes and cut (green) grass the best mulch I can use. The ashes gather moisture, and repel heat (by their color). Grape-vines that were mulched at the commencement of the drought are doing finely. The moisture extends not only to the surface, but into the grass (mulch). This has been moist since it has been applied,—some three weeks. It is partly rotten, so that the ground derives nutriment from it. A shower, now, would aid this effectually. Thus this mulch is both protective and enriching, and the nutriment of a kind that is wanted,—the vegetable or carbonaceous. A good mulch in the summer, and a coat in the fall of this kind, is all I want on fair or even moderately-poor soil; providing always the soil is in a healthy, friable condition. I also want clay to a considerable extent. Then close pinching *in the start*, with *plenty of room on the trellis*; and, if the year is not a bad one,—particularly a wet one,—I should have fruit. A drought like the present, with heat unexampled, seems a benefit rather than a hurt; and, should the wet set in, here is extent on the trellis that gives plenty of air, and takes what sun there is. I thus am defying the drought, and fear little more the wet season; but, for a drought, cut grass and leached ashes are a reliance that it does you good to contemplate. The ashes also are a benefit manurially: it requires but a thin coat, so as to cover well the grass.

It is time yet to benefit vines by the application. First mellow the soil; spread the grass several inches thick; sprinkle with water, and apply the ashes. Weeds or garden-refuse are a good substitute for grass.—*F. G., in Country Gentleman.*

[We have great doubts about the necessity or propriety of mulching grape-vines. Where the soil is much inclined to be weedy, it may do very well to keep the weeds down; but we hardly think it can be of much benefit to the vine, which, in this climate, needs all the sun and warmth it can get. We have Concord vines growing well, unmulched, in a dry, gravelly soil, where even white beans will not flourish. Unleached ashes is a most excellent manure for vines.—*Eds.*]

EVERGREENS FOR THE MILLION.—A good many of our readers have heard of Robert Douglas of Waukegan, aforesaid, as a nursery-man, a pear-grower, and, for a considerable number of years, as a grower of evergreens; in the latter as an innovator, inasmuch as he has made bold to contend that evergreens can not only be grown in this country, but from seed, so that it would *pay*,—quite a feature to an energetic business-man.

We recollect, some eight or ten years ago, we used to be astonished to see what a lot he raised, when probably, all told, his plantation did not average more than a city lot of ground, say twenty-five by a hundred feet. He was then feeling his way, and, like all men of his class, kept increasing his breadth, until now he stands without a rival in the country; and probably has more one-year-old seedlings than all the rest of the country put together; that is, cultivated.

Quite a number of your readers scarcely understand, perhaps, what is required to bring young evergreens through the first two seasons from seed. It is, that they must have some shade from the burning rays of our hot summers. Now, in small quantities, this is not so much of a job; but, when one comes to acres to be so covered, one will at once see it cannot be done without expense and trouble. At the time we first knew Mr. Douglas, this covering consisted of continuous beds, covered with slats or laths about as far asunder as the latter are wide, and raised about nine inches or one foot from the ground. This idea appears to have succeeded well enough while the breadth to cover was confined to an acre or two; but then the time of constructing, and the quantity of laths required, began to be a serious obstacle to further progress. Nothing daunted, Mr. Douglas erected posts six feet apart or so in the rows, and twelve between; nailing fence-boards edgeways on these about six feet high, and covering a matter of three or four acres in one patch with branches of trees laid on this framework. To the eye these beds have a very pretty effect, not unlike a young growth of grass just springing up. In the winter, all these small chaps are covered with leaves or litter: some are thinned out and sold; others stand from one to two years longer in the same position, and are sold as two or three years old, or transplanted at home for more extended culture.

The sorts grown are mainly Austrian, Scotch, and white pine; Norway and white spruce; balsam, larch, and American arborvitæ; with smaller lots of choicer sorts; with one very pretty bed of Lawson's beautiful cypress, that, so far, looks capitally. A little is done with evergreens from the forest, but, as compared to the seedling business, is but a trifle. However, in the American arborvitæ, he has a matter of two hundred thousand, all planted out and doing well,—all obtained from the woods.

To give an idea of something like the quantity grown here, it is estimated that there are six acres of these seedlings of this year's growth, all covered one way or another. Deduct one-third of the ground as alleys, wastage, &c.; allow an average of, say, twenty-five to the square foot,—and it surely is little enough; for the arborvitæ particularly are as thick as they can stand, at least one hundred to the foot,—and we have the nice little number of nearly four and a half millions. To sow this amount of ground required one ton of seed. Think

of that! — a ton of evergreen seed to be sown by one nursery-man, and that a Western one too!

Lawson's cypress cost five dollars per ounce. So far, Mr. Douglas cannot supply the demand; showing conclusively that somebody is tree-planting, at any rate. Until recently, he has had some forty men employed.

Pears, his old hobby, are not quite so flourishing. Blight has injured many trees; and the dry summer last year has visibly affected the trees, the crop being short, and the fruit somewhat defective. — *E. S., in Prairie Farmer.*

THEORY OF GRAPE-ROT. — I was reminded of the old saying, that "one story is good until another is told," when reading an article in "The Cleveland Herald" of the 2d inst. under the above head, and purporting to be a letter from Dr. Schroeder of Bloomington, Ill. to W. L. Curtis of Catawba Island.

The writer assumes that the cause of the grape-rot is now discovered; that it is owing to the age of the vines; that rot is sure to appear after the vines have been in bearing a certain number of years; and concludes by saying that the grapes will begin to rot next year in Cleveland and along the shore eastward.

Now, it must be patent to all who have given the matter attention, that, when the rot prevails, it is found equally in vines just coming into bearing and those of the oldest growth. I have in my vineyard Catawbas which have been in bearing twenty years, and also vines which have been set almost every year during the whole of that period. In my experimental vineyard, where the first vines were set, I continued to add about fifty vines a year for a number of years. In this vineyard there is a difference between the first and the last planted of at least fifteen years; and, when the rot prevails, the latest planted suffer equally with the oldest in bearing. If there can be said to be any difference, it would be in favor of the oldest, since we have always found our best grapes on our oldest vines.

It may be, and observation seems to warrant the belief, that in certain localities, perhaps in all where the Catawba has been cultivated a sufficient length of time for the cause, whatever it may be, to develop itself, it is found more subject to rot than when just planted in that particular locality; but the theory, that the age of the vine has any thing to do with it, observation and experience show to be as utterly without foundation as all the other theories which have been advanced, every one of which, so far as I know, have been demonstrated to be false by facts within the reach of all careful observers. Whatever the cause of the rot in the Catawba may be, it is yet to be discovered: until that time, the cause assigned by one of the oldest grape-growers, as the only one which would cover the whole ground, will stand good, — "pure cussedness." — *G. C. H., in Ohio Farmer.*

KELLY'S ISLAND, October, 1868.

[We never had much faith in Dr. Schroeder's theory, although we hoped that his method of preventing the rot might be successful. As to mildew, we know that *that* attacks vines of all ages; being, of course, more fatal to a young and slender vine than to one well established. — *Ed.*]

MESSRS. EDITORS, — After seeing the recent attacks on the Iona Grape, which seem to come from parties prejudiced, or else those who have not given it a fair trial, I deem it my duty to give you a statement of the result of my experience with four hundred Ionas obtained of Dr. C. W. Grant, and planted in the spring of 1866. They all grew vigorously, averaging canes from four to six feet in length the first year, with perfectly healthy foliage. The second season, 1867, every vine was living in its place, and made vigorous canes for fruiting the year following. The third season, 1868, the canes being pruned three to four feet in length for bearing, set fruit from every bud. Some of the canes produced as many as forty-two bunches of beautiful clusters, perfectly sound, without any mildew or rot. The result was far better than I obtained from Concords planted at the same time, and receiving the same culture; the Concords having the advantage of being extra layers. Now, I only wish to say, since enjoying the Iona Grape, that I consider it superior to all other native grapes with which I am acquainted. I also intend to have a larger and better crop of grapes next season from the same vines. The Iona, with proper culture, I consider a success.

R. B. Stevenson.

THE WINTER-DRESSING OF ORCHARD-HOUSE TREES. — Orchard-house trees, &c., may be kept free from insects by very simple means. As soon as the leaves fall, the trees are pruned, and well washed with cold water thrown upon them by a powerful engine. This washing is repeated two or three times; and it tends to remove dust, and possibly a portion of the insect ova, &c., which may have been deposited. The house is thrown quite open, and nothing more is done until the buds begin to swell in spring, when the engine is again brought into action on the morning of every favorable day; the practice being, of course, discontinued as soon as the blossoms begin to expand.

As soon as the fruit is set, if insects are found to be at all troublesome, fumigation is resorted to; and it is found that with the aid of two simply-contrived but very effective fumigators, using a quarter of a stone of tobacco-paper, which costs five shillings, mixed with a quarter of a pound of tobacco, which costs one shilling, a span-roofed orchard-house eighty feet long, twenty feet wide, and twelve feet high, can be filled with a dense volume of smoke, which kills every thing in the shape of thrips and of green or black fly. This operation is seldom required to be performed oftener than twice or thrice during the season.

With regard to peach and other trees trained upon walls in the open air, I would recommend in all respects similar treatment to that above described as adopted for trees in the orchard-house; substituting for the fumigation, in the case of the wall-trees, a thorough syringing with a solution of Gishurst Compound, using about four ounces to a gallon of boiling water. This syringing, like the fumigation, will not require to be repeated many times during a season.

The brown scale will sometimes attack the peach and other trees in the orchard-house. When such is found to be the case, they must be removed mechanically by being scraped or brushed off with a tooth-brush, well washing the part to which they had adhered with a solution of Gishurst Compound made in the manner above directed. — *Florist and Pomologist.*

STRAWBERRIES FOR FAMILY USE.—Some half a dozen years ago, a party, all lovers of good fruit, made a visit to the nurseries of Parsons & Co., when strawberries were ripe, in order to learn from their experience and our observation what variety was really good and reliable for family-use. They had beds of about forty varieties in bearing, — the best they could select at that time. It was the opinion of the firm then that Cutter's Seedling was preferable to all others; and they remarked, that, when they picked for their private use, the Cutter's Seedling was selected. We procured plants, and have disseminated them to several neighbors since; and it is their united opinion, that, of the many new and old varieties tried here, Cutter's Seedling gives the most satisfaction. They are too soft for carriage, but all the better for table-use; bear a long time; are very hardy and thrifty; fruit-stems strong and erect, keeping the berries from the ground. The plant can be procured at low rates. *I. H.*

[*Remarks.*—We have been familiar with the variety named for several years, and we do not regard it as a valuable one, and should not certainly recommend it for market-purposes; and there are many other varieties far superior to it for family-use. It is possible that it may do better with our friend than any other that he has grown; and that leads him to speak well of it. It is not large, of a rather light color, soft, and of quite ordinary flavor. It has been discarded by all the growers about Boston, where it was quite extensively planted several years ago.—*Eds.*]

AXIOMS IN MELON-CULTURE.—VARIETIES.—*First*, To have the greatest success in growing the nutmeg-melon, you must have *deeply-loosened*, warm, dry soil. Nothing that grows, enjoys and flourishes more under the above-named *condition* of things. It is of more *importance* than the particular *kind* of soil. It is vastly better than *manure*; for the sweetest and best melons are not grown in the richest soil.

Second, Don't be in such a *hurry* to plant that you thrust the seed into *cold, wet* ground, from whence they never have resurrection. On the other hand, don't delay planting a moment after you have the conditions of a "deeply-loosened, warm," and moderately-dry soil.

Third, Plant *wide apart*, say rows eight feet, and five feet in the row; and put *plenty* of seed in the hill, twelve to fifteen. This is to provide for the *bugs*. They will take some, and you can't help yourself. When all danger from insect enemies is past, *thin* to *three* plants in a hill.

Fourth, Cultivate *shallow* and *thoroughly*. It is to your shame and loss if *weeds* are allowed to grow at all.

VARIETIES.—The following are the varieties with which we have had experience the past season: *Skillman's Fine Netted*.—Small melon; good early sort. *White Japan*.—Small, early, thin skin; good family sort. *Persian*.—Late variety; large, very fine, and worthy of more general culture. *Minorca*.—There is nothing like it for *size*. It is a perfect *whale* in its way. We cannot particularly recommend it for quality. *The Alton Large Nutmeg* is a moderately large green-fleshed melon; thick, melting, sugary, and highly perfumed. It is by far and *in every respect the best melon* grown in this Western country.

O. L. Barler.



THE Editors of "Tilton's Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

KIRKWOOD, Elizabethtown, N. J. — Plums are very easy to grow if you will take care of them. No tree produces better or more regular crops; but they will not take care of themselves. Give them attention, keep off or destroy the curculio by lime or jarring the tree, and your plum-trees will well reward your care. As to black-wart, no excuse can be offered for it. A sharp knife, and attention to the hedge-rows to destroy the spores, will keep your trees clean.

WE are often asked, Does it pay to grow raspberries? In reply, we publish the following record of experience from a correspondent:—

“Does it pay to grow raspberries? To show whether it does pay to grow raspberries or not, I will give the yield from half an acre grown the past season. The plat contained originally seven hundred and twenty-five plants, of which number from thirty to sixty were killed out the first year by hilling up. The soil was composed of yellow sand and a loamy heavy sand with a clay bottom on part of the plat; the variety, Seneca Blackcap. There were picked for market over forty bushels, which sold for over four dollars per bushel; and several bushels of which no account was made. What were picked for market were grown where it was sandy bottom. On the clay bottom, there were from twenty to thirty bushels of berries which were left unpicked from being so dried up as to be worthless. There was not enough rain, but once after they had blossomed, to reach half way to the roots; but with the lack of moisture, had the plat been thoroughly cultivated, the loss of berries would have been small. But there was nothing done to them after they were hilled up in the spring. No one need expect to grow good crops of berries without giving them proper care. In a favorable season, with proper cultivation, a hundred bushels of berries can be grown on the same plat where only a little over forty were sold this year from it. If any one doubts that the above yield can be grown on half an acre, I would advise him to go and see various growers, and see the different yields; and, if he then has any doubt about such yields, let him come and see my plantation while in bearing, and I think he will have all doubts removed.

“But such yields are not required to make it pay: even fifty bushels per acre pays a great deal better than a crop of corn. But every one who has a rood of land should raise enough for his own use.

W. Wight.

WATERLOO, N.Y., December, 1868.

W. I. K., Providence, R.I. — Flower-seed is prepared for market by winnowing. The heavier kinds as well as the larger sorts may have to be hand-picked; but, generally, shaking the seed will separate the heavier from the lighter portions. A little practice will enable you to succeed.

I. A. L., Burlington, N. J. — Calla-lilies are generally very clean plants, but occasionally become infested with green fly. If not convenient to smoke them, a washing with lukewarm water with a soft sponge will remove the trouble.

F. L. W., Jamaica Plain, Mass. — Chinese primroses are generally raised from seed, and bloom the first year. The double varieties are propagated by division, which is best done in the spring. Do not allow them to bloom in the summer. You may obtain seeds in many varieties at any seed-store.

TYRO. — The plants which you pulled up “for grass” were your seedling gladiolus, and you have lost a year. Probably most of the seed vegetated. Be more careful next time. Had you looked carefully, you would have found the plants were not grass.

B., St. Louis, Mo., writes, "I have this year tried an experiment in protecting my half-hardy rose-bushes. They are first tied up; then covered with straight straw, put up and down, which is tied fast. The earth is then hilled up six or eight inches around the bottom of the straw. The whole is then covered with tarred roofing-felt in a conical form, so that the bottom of the cone shall go below the top of the hill of earth. By this arrangement, the rain is thrown entirely away from the roots of the rose-bushes, instead of running down the straw among the branches and roots. Can some of your readers tell me whether the coal-tar on the roofing-felt will injure the roses, with the straw intervening?"—The coal-tar can hardly be injurious, as it is not soluble in water; and, even if it were, the cones of earth would conduct the water away from the roots. We shall be interested to hear the result of your experiment. — *Eds.*

E. W. B. — You cannot successfully keep your grapes far into the winter. The best preservative is cork-dust, in which all foreign grapes which come to this market are packed. Much, however, depends upon the condition of the grapes: they must not be over-ripe, nor yet too green. Some varieties will keep very well if laid in a dry, cool place: the berries shrivel a little, but do not rot. Another mode is to cut the bunches when fully ripe, seal up the stem with wax, and hang them up in a dry, frost-proof room. We have seen it advised to suspend the bunch by a string tied round the lower part of the stem, thus reversing the order of Nature; but, beyond the berries thus falling more away from each other, we have seen no advantage in it. The grand secret of success, in a word, is to keep a dry, cool, even temperature.

B. A. S., Haverhill, Mass. — The pears sent are Bleeker's Meadow, sometimes called Feaster or Feaster's Meadow. It is a native fruit, introduced by Bloodgood & Co., of Long Island, some thirty-five years ago. It is by no means of first quality.

OUR esteemed correspondent Mr. Eugene A. Baumann writes us as follows in answer to questions addressed us by a friend as to the management of variegated ivies:—

"To get a better growth of these plants, I plant them generally in open ground in spring, and pot some of the best in the fall to keep them under glass. In open ground, they turn freely green: those that keep the variegation grow very little compared to those that turn green; but if potted, and kept shady, the growth they make under glass returns variegated again, and we have them in spring very fine plants. The Taurian ivy is very heady, but a slow grower. Some of the variegated Irish I have planted in the greenhouse, in shady corners, where they grow luxuriantly, and keep the variegation all over, except on early shoots, which we have to suppress. I propose trying whether, with a different soil, the variegation may not be made more permanent: there must be somewhat in this operation, as plants I have sold to other parties are in some places much finer than my own, although very strong, and kept out doors on the shady side of buildings."

C. K. M., Naples, Ill. — I have an apple-tree about twenty years old, the fruit of which is entirely worthless. One small limb has been grafted with the Red June (as it is called here), which does well. What had I better do with the tree? — Graft it all with the same variety that you have put into the one limb, or with any other good sort. Do not cut it too much the first year. — *Eds.*

Some persons think Lima beans for winter-use should ripen on the vines; but this is not necessary. Last fall, my vines were badly bitten by early frosts before they had matured half the crop. I gathered all that were over half grown, and dried them near the fire. When soaked in clear water over night, and cooked, they can hardly be distinguished from green ones fresh from the vines. — We have for some years been in the habit of saving Lima beans in this way, though we should prefer to have them more than half ripe for the purpose. — *Eds.*

C. K. M., Naples, Ill. — In an article on "How a Small Farm was managed," in the April number of the year 1868, the writer, speaking of lettuce, says, "The entire crop of seven hundred dozen averaged a dollar a dozen." Please tell me what size the plants were, and how treated. — The plants were left in the hot-bed until they had formed a small head, and then sold. The seed for the earliest-crop that was sent to market the last of February and first of March was sown the last of November, and, as soon as they had formed four leaves, were transplanted into the beds where they were to grow. Other seed was sown later, so as to have a succession. The only secret about the whole thing was to give it good treatment and plenty of room, so that it would be a nice article. Some of it sold for a dollar and a half a dozen. — *Eds.*

My Wilson's strawberry-plants bloomed profusely in the open ground the last of November. Does this variety generally do so? — No; nor is it well to have them. When the autumn is warm and quite wet, strawberry-plants will often show bloom. We are not aware that this variety is more likely to do so than any other. — *Eds.*

T. S. S. writes, "I have frequently heard it asserted, that, when the parent tree dies, all trees grafted from it will soon after decline and die. Is it true?" — A more nonsensical statement, or one so utterly without foundation, never was made. Yet we know that this is a popular superstition. We are curious to trace its origin. Can any of our readers assist us?



APRIL.

SUB-TROPICAL GARDENING.

By C. M. HOVEY, Ex-President of the Massachusetts Horticultural Society.

THE "sub-tropical" style of gardening, so called from the use of plants mostly from tropical climates, is undoubtedly familiar to most of the readers of the Journal. First attempted in the parks, the boulevards, and public grounds, in Paris, where the grand effect produced attracted the admiration of all who witnessed them, and subsequently introduced into the Battersea Garden in London, all readers of foreign gardening journals or of "Hovey's Magazine" are more or less acquainted with what "sub-tropical gardening" is, and the rich ornamentation produced when carried out with good taste, and the free use of plants especially fitted for the object.

The mixed style of planting generally adopted years ago gave way in part to the bedding system, and that again to ribbon gardening; but in each and all of these styles, which have their merits, the plants were annuals, perennials, or the ordinary so-called bedding-plants,—plants which flourished well turned out into the garden in summer, flowering at once, and so profusely as to keep up a display the whole season. Sub-

tropical gardening is a new feature, and not fitted for every place : but, when space and position offer, it has merits which neither of the others possesses ; and, for lawns or grounds of any extent, it is susceptible of being made a feature unsurpassed in its effectiveness and grand display of magnificent foliage.

Our climate favors us. With a higher temperature than that of Paris or London, all tropical plants flourish in greater perfection, and grow with unexampled rapidity. The banana, which has been thought only fitted to the high temperature of the tropics, seems entirely at home ; and other plants, which we have considered so sensitive to cold as to require the protection of the greenhouse, even in summer, thrive equally as well. Certainly the season is short : but in this tree of trees we are treated to a feast of rich vegetation which we cannot enjoy only in warmer climates ; for our hot-houses are too small, and the temperature too low, to bring out the vigorous growth they attain in the space the free earth of the open garden affords.

Few attempts have yet been made to introduce this style in such a manner as to show its real magnificence ; but something has been done by the introduction of a few of the leading plants to foreshadow its general character. The cannas with their stately growth and massive foliage, and the caladiums with their broad leaves, now very well known, will give an idea of sub-tropical plants.

These are, however, but two out of many classes of plants equally efficient which may be used in this style of gardening. It is only necessary to name the palms and banana as specimens which flourish freely, to show how varied the vegetation and how grand the effect.

What is especially gratifying is, that, while many of the so-called bedding-plants can only be kept in the greenhouse in winter, the cannas, caladiums, gunneras, tritomas, &c., may be wintered in any good cellar : hence they may be introduced in gardens where there are no means to secure the others, and at very moderate expense. Though we may here add, for the benefit of some, that any attempt to do sub-tropical gardening in its real character, or, indeed, any style of gardening, without expense, will end in failure.

With these few hints on the subject, we have only to allude to a few of the principal plants adapted to this style, to which additions will undoubtedly be made as experience shall prove them suited to the purpose.

The CANNAS hardly require any additional commendation. There are an immense number of kinds. From the two or three kinds known a few years since, skilful cultivators have produced nearly a hundred sorts,—many of them remarkably beautiful both in foliage and flowers. All are good. A few, however, represent the class, and are sufficient, except in extensive grounds. They grow from three to eight feet high, and form superb groups.

The COLOCASIAS and CALADIUMS are another fine group and fine-foliaged plants ; the latter remarkable for the gay spotting and coloring of their leaves. These, especially the caladiums, are fitted for outer lines of beds.

The DRACÆNAS, unique in the green, bronze, or crimson leaf-tints, are highly picturesque and showy plants, affording more contrast, perhaps, than any other group.

TRITOMAS are remarkable for their glorious flower-heads, which, appearing through a mass of long, recurved, narrow leaves, form an imposing mass throughout the whole autumn months until frost. To these as principals we may add the ricinus (castor-oil bean), the daturas, solanums, Japanese maize, wigandias, achyranthes, coleus, centaureas, pampas-grass, &c. ; and, on grounds of moderate extent, they will give a good variety.

In larger places, as isolated specimens, the palms, New-Zealand flax (phormium), the bananas, agaves, &c., form conspicuous objects. They may also be grouped with kinds above named.

In this brief notice, the object of which is to invite more attention to sub-tropical gardening, it is only necessary to indicate some of the objects, leaving the details to the amateur planter.

We should not close this article without stating that it is of the utmost importance that the ground should be prepared with great care to secure the best results. Not only should the soil be deep, but it should be well drained. It should be made rich, not with fresh manure, but with that which is old and thoroughly decayed, or well-rotted leaf-soil ; a loose rich bed in which the roots can extend rapidly and deeply. The surface should be slightly raised to receive the warmth of the sun ; and excess of moisture should be obviated. Let the plants be vigorous and in good condition when turned into the soil ; and in dry, hot weather, water liberally. All extra care will bring with it a rich reward in ample growth, rich foliage, and luxuriant aspect.

REMARKS ON THE PINK FAMILY (*Dianthus*).

PART I.

By JOSEPH BRECK, EX-President of the Massachusetts Horticultural Society.

THE *Dianthus*, or Pink family, in many of its sections, has for ages been the favorite of the garden ; highly esteemed for its perfection of beauty and exquisite fragrance.

Dianthus, the botanical name of the genus, is derived from a Greek word, signifying, literally, *Jove's Flower*, or the *Divine Flower*. Whether this name was bestowed upon it on account of its beauty or its fragrance, has never been determined ; but it is worthy the name from either quality. The name bestowed upon the genus may be taken as a proof of the favor in which it was held a long time ago.

THE CARNATION. — The carnation is said to be a native of Middle Europe. "It is quite doubtful whether the ancients knew it at all, as there is no allusion to it in any of the classics ; but it has been for a great length of time a favorite with all Germany and the north of Europe." Gerarde, who published a large folio volume in 1597 on botany, medicinal herbs, flowers, and vegetables, first introduced the carnation into England about that time. He quaintly tells us, that, in his time, it was in great esteem "to deck up the bosoms of the beautiful, and make garlands and crowns for pleasure." Since Gerarde's day, the Anglo-Saxons have by no means neglected the carnation.

Within the last seventy years, some of the leading English flower-fanciers have enumerated three or four hundred sorts in their catalogues. The perfection to which their culture is carried quite astonishes one. Indeed, they are most tenderly nursed. They are always kept in pots. They are closely watched at all times, but especially when approaching the blooming season. The buds are then thinned out as soon as they are well formed ; the flower-stems are supported by neat and slender green stakes ; the opening blossoms are prevented from turning awry by pieces of card placed beneath them ; and at length, when the expected time has arrived, the whole collection is placed under a tasteful awning upon stages, the plants rising one above another to show all of them to the best advantage. It is quite

impossible to imagine any thing finer than the "gay confusion" that meets the eye when such a display is in its perfection.

Of late years, the mania for carnations has greatly subsided, as many new



flowers have been introduced, which have attracted the attention from this favorite to many of the novelties of the day, which, however, are far inferior to this highly-esteemed old denizen of the garden.

The climate of New England is supposed to be very unfavorable for the

successful cultivation of the carnation. Perhaps this idea may arise from the want of proper care and attention which it receives in Europe.

There is a difficulty in keeping them through the winter, especially



some of the varieties ; and then the great heat of our summers is also unfavorable for their greatest perfection. The only sure way is to keep the plants, when potted, in light cold frames, giving them air in moderate weather, and not to let the sun shine upon the plants when in a frozen state.

Freezing does not hurt them ; but continually freezing and thawing does. Layers which are strongly rooted, when kept on the mother-plant, and covered with leaves as cold weather sets in, thus keeping them from the action



of the sun, in some of the more hardy varieties will come out tolerably well in the spring, but will not be so strong as those kept in the cold frame or in the coolest part of the greenhouse.

I have found that all the varieties of carnations and pinks, when raised from seed, are perfectly hardy the winter before they bloom, but generally perish the next winter. Very little seed can be obtained from choice, perfect double pinks or carnations: consequently the seeds are very expensive, and are valued at about ten dollars per thousand seeds. From these many fine

varieties may always be expected, which may be worthy of propagation. Choice German and Italian seed is much less expensive, and often produces very handsome fragrant double and semi-double flowers of many colors which are admirable for the borders.

The carnation, in its most perfect state, is known to florists in three principal forms; viz., the *flake*, the *bizarre*, and the *picotee*. Flowers of one color are called *selfs*. *Flakes* have only two colors: their stripes are large, going quite through the petals. *Bizarres* (from the French *bizarre*, "odd, irregular") are variegated in very irregular spots and stripes, with no less than three colors.

Picotee (from the French *piqueté*, "pricked," or "spotted") differs entirely from the foregoing. They are usually bordered with a narrow margin of some dark color, or are dotted with a great number of minute spots. The flowers are usually smaller, and the plants much hardier, than the flakes and bizarres. "The edges of the flowers in picotees are generally serrated, or cut; though, in the finest specimens, they are often nearly even. This class affords the greatest variety, both in the ground and the spots and pencillings, — yellow, purple, lilac, white, crimson, &c."

J. F. C. Hyde, Esq., President of the Massachusetts Horticultural Society, has been very successful in raising some distinct pinks as described below, which have been very much admired by amateurs. Three of them are selfs; the other a regular picotee, according to the rules laid down for a perfect flower. They are now in possession of William C. Strong, Esq.

"The seedlings alluded to have received the highest commendations as exhibited in the horticultural rooms; and are undoubtedly the most vigorous, hardy, profuse, and perfect-flowering varieties produced in this country and adapted to our climate. All these will endure our winter with a slight covering of litter or boughs.

"*Sally Lee*. — Flower very large and double, two and a half inches in diameter; petals large, round, smooth; centre full and bold; never bursts; color a brilliant magenta; fragrant; stalk two feet high; grass most abundant, giving a remarkable profusion of bloom.

"*Emily*. — Flower large, two to two and a half inches across; double and full, with good outline; pure white; very free, hardy, and vigorous; stalks eighteen inches high; very valuable for the florist.

"*Mrs. Bishop*. — A beautiful picotee, large, well shaped; petals large,

finely formed, and free from serrature ; full in centre ; color creamy white, beautifully edged with crimson ; very fragrant ; equal to the foreign high-breds in beauty, and far surpassing them in strong, robust habit.

“ *Augusta*. — Flower of good size ; petals smooth, nearly free from serrature ; outline good ; never bursts ; remarkably free, and very fragrant ; color a dark purple ; stalk two feet, vigorous and very hardy.”

The following directions for preparing a compost for carnations and pinks, and a description of the properties of a fine double carnation, is taken from “The American Garden Calendar,” a very useful and comprehensive work, containing about seven hundred pages, published by Bernard M'Mahon, nursery seedsman and florist, Philadelphia, in 1806. Probably these directions were taken from English works, but are as valuable for this country and the present time as for the past and for any other place.

“ **COMPOST.** — The proper *compost* for these flowers is as follows : One-half fresh, sound loamy earth, taken from the surface of a rich pasture-ground, turf and all, not more than four or five inches deep ; one-third or a little more of old horse-dung, such as has been a year previously used for hot-beds ; one-sixth coarse sea or river sand.

“ These ingredients ought to have been mixed together in autumn, laid in a heap about two feet thick in an open exposure, and turned three or four times during winter (if you can), so that all parts may be well incorporated, and have the benefit of the frosts. Early in March, it should be gathered into a round, conical heap, to drain and to become dry ; and when sufficiently so, and wanted for use, pass it through a coarse screen or sieve to reduce its parts, and take out stones or any other extraneous substance which it contains.” The same compost will be good for pinks and various other plants.

“ **PROPERTIES OF A FINE VARIEGATED DOUBLE CARNATION.** — The stem should be tall, strong, and straight, not less than thirty nor more than forty-five inches high. The flower should be at least three inches in diameter, and the petals well formed, — neither so many as to appear crowded, nor so few as to appear thin. The lower or outer circle of petals, commonly called the *guard-leaves*, should be particularly substantial : they should rise perpendicularly about half an inch above the calyx, and then turn off gracefully in a horizontal direction, supporting the interior petals, which should

decrease gradually in size as they approach the centre, which should be well filled with them. All the petals should be regularly disposed, and lie over each other in such a manner as that their respective and united beauties may meet the eye together: they should be nearly flat, or at most have but a small degree of inflection at the broad end; their edges should be perfectly entire (or what is called rose-leaved), without notch, fringe, or indenture. The calyx should be at least an inch in length, sufficiently strong at the top to keep the base of the petals in a close and circular body. The colors should be distinct, and the stripes regular, narrowing gradually to the claws of the petal, and there ending in a fine point. Almost one-half of each petal should be of a clear white, and free from spots."

SOUR STUFF.

"Poor, sour stuff; needs brandy to make it decent," was the encouraging remark of a friend for whom we opened a bottle of very tolerable claret a while ago. This remark is a pretty fair index of the feeling of most Americans towards large classes of the best wines in the world for every-day use, — viz., Claret, Sauternes, and light German wines, — and shows how far the public taste has been perverted by the wholesale use of fiery liquors. Strong, burning Sherry, Port, well "fortified" with brandy, and wines of like strength, always find admirers and consumers; while wines of real delicacy, high flavor, and intrinsic worth, are set aside as "sour stuff." Of course, the only remedy for this state of things is to educate the public taste to the right standard. To do this, we need good, cheap native wines in abundance.

We have now grapes that will make wine capable of rivalling any foreign kind; and we need only to push on, and to cultivate and manufacture on a large scale. Then, by giving the would-be consumers good wines at a moderate price, we may reasonably hope to introduce a higher standard of taste, and to win a victory over spurious brandied liquors. That such a victory is desirable, no one can doubt.

HARDY APPLES. — SIBERIANS.

THE sad experience of many of our orchardists in that portion of the great North-west which lies north of latitude forty-two degrees, and west of the Great Lakes, has discouraged many from planting fruit-trees. The same causes have stimulated others, lovers of fruits, to seek, among those varieties that originated in northern regions, for such as might withstand the trying climate of the North-west.

It was soon observed that the apples known as Siberian Crabs were pre-eminently hardy, even where the favorite orchard-fruits of rugged New England had failed to survive through a series of winters of the trying climate. Some orchardists confined themselves exclusively to plantations of this class of apples. Many new varieties were produced from seed, some of which are of increased size and beauty. Many of these are annually exhibited at the fairs; most of which, however, present little improvement in any respect upon those well-known varieties, the Large Red and Large Yellow Siberians. What is wanted in this direction of progressive development is increased size, with improved quality, and a later period of ripening. These properties are already making their appearance, as will be shown in this paper.

Whether the improvement in this class of fruits is the result of crossing, or has arisen from a tendency to variation after long civilization, no one can tell: if from the former, the crossing has been accidental.

It is doubtful whether any true *hybrids* have been produced; indeed, it has been questioned by some botanists whether these Siberian apples constitute a distinct species, or are merely a well-marked variety or subspecies.

These fruits, commonly called Siberian Crabs, have generally been referred to the wild species of Northern Europe and Siberia, as the common apples are believed to have descended from the *Pyrus malus*, or Wild Crab, of Southern Europe and Western Asia. If this be correct, it is somewhat strange that the strong character of the *Pyrus baccata* has been lost; and this is a remarkable thing to happen in the way of variation. The Currant Crab may be taken as the type of the native Siberian apple: in it the fruit

is not only very small, but is arranged on a raceme, like a bunch of currants ; and the seeds are peculiar, quite different from those of the common apple. Botanists have referred these crabs, however, to this species *baccata*, and have been followed by all our leading pomologists. One of our common cultivated varieties, the Large Red, has been called *Pyrus prunifolia* by Loudon ; but this is manifestly only a variety, and not a distinct species.

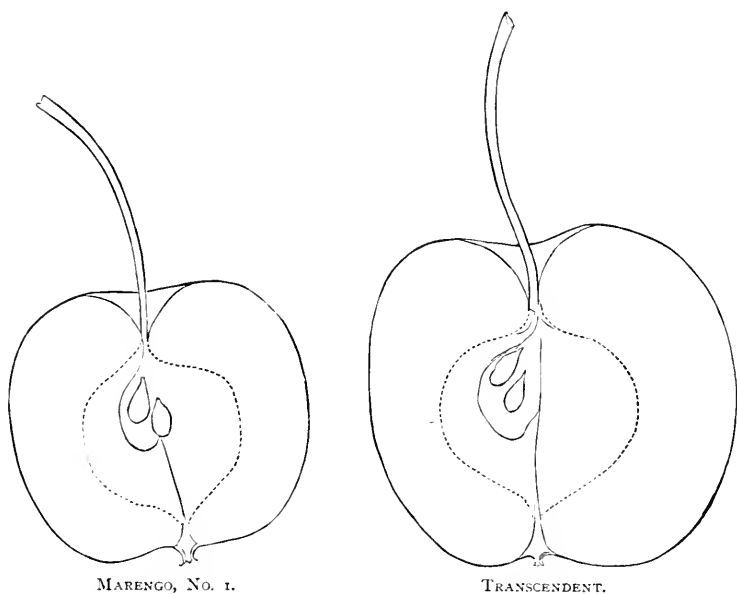
So deep an interest has been taken in this question of Siberian apples, particularly among Northern planters, that it seemed well worthy of thorough investigation. The Siberians constitute a distinct species, or, at least, a very distinct sub-species. They are remarkable for their hardiness in an extreme climate ; thriving on the stormy heights of the Keweenaw peninsula of Northern Michigan, in latitude $47^{\circ} 20'$; on the mountain at Montreal, latitude 46° ; and elsewhere as far to the north as they have been planted : and in many places they are the only apples that withstand the climate for a series of years. These trees are also remarkable for their beauty of form, of bark, of twigs, of foliage, of flowers, with exquisite and peculiar perfume, and, lastly, for the extreme beauty of their attractive fruit, which is produced early, and in the greatest profusion.

D. W. Adams, the well-known horticulturist, secretary of the State society at Waukon, Northern Iowa, says, " I have no doubt, but, in hardiness and early productiveness, the Siberians stand at the head of the list." This is the universal opinion among all propagators in the North-west since the fatal winter of 1856 ; and the hardiness of the Siberians has caused their enormous increase. Hundreds of thousands of them are annually planted ; and though small, and of short duration, being autumn-fruit, they are certain to bear, and at least are better than no apples. But the *Pyrus* is an improvable race. Who can tell what may yet be developed from the Crab, and retain its wonderful hardiness of tree ? Our native Crab, *Pyrus coronaria*, is also hardy enough ; but it has so little tendency to variation as to offer us little encouragement ever to expect from it a rival to the Baldwin.

Not so with the long-cultivated Siberians. Prominent among the early improvements of this group of apples are the Large Red and Large Yellow already mentioned, the Montreal Beauty, the Transcendent (largest of all), and its rival in size and beauty, the Hislop. Among those of more recent origin, I propose to introduce some of those selected from a large number

of seedlings grown by A. R. Whitney at Franklin Grove, Ill., and the "Winter Crabs," introduced to the public by Charles Andrews of Marengo, in the northern part of that State, some of which were exhibited in good condition at the Freeport meeting in February, 1868.

These last show that we may now hope for other modifications in this group, and that we may look for increased size, melioration of quality, adapting them for table-use, and, above all, the great desideratum of an extended period of ripening, so that the fruits may be kept sound all winter like other apples. Hitherto these Siberians have been cultivated solely

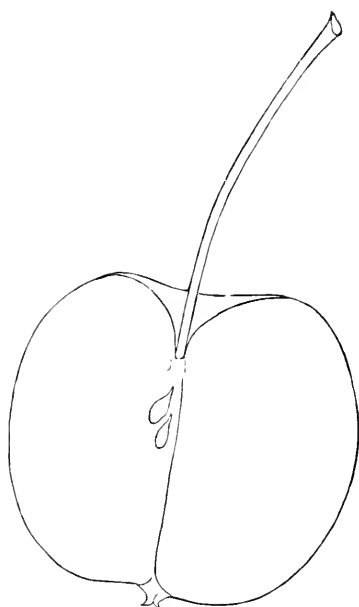


for their beauty as ornamental trees and fruits, and for preserving and jelly-making. One orchardist, however, supposing he had purchased a hundred of the Hewes Crab from a tree-peddler, found them to be the *Large Red*: however, as he had planted for cider, he made up the fruit, and had a choice article in his casks, which brought him a good price.

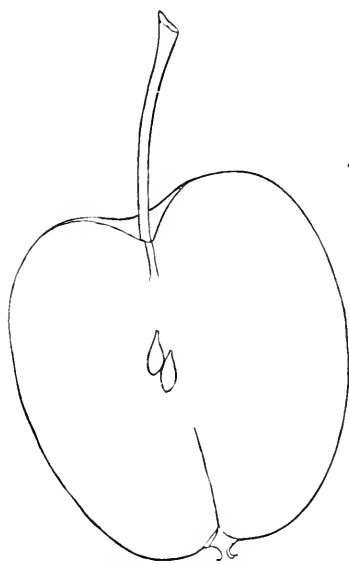
Transcendent. — Grown at St. Paul's, Min. Fruit globular, angular, or somewhat flattened at the sides, very large for this class; surface very smooth and shining, deep red, or crimson hiding the yellow ground-color; dots small, fawn-colored; basin shallow, folded, and corrugated; eye small,

long, closed ; calyx reflexed ; cavity medium, wavy ; stem very long, slender ; core large, regular, closed, clasping the eye ; seeds numerous, plump, brown ; flesh breaking, juicy ; flavor sub-acid. Use, ornamental and preserving ; season, September.

Hislop. — The large cut grown at St. Paul's ; the smaller at Rochester, N.Y. Fruit globular, regular ; surface very smooth, dark red or yellow ; dots small, fawn ; basin shallow, folded ; eye small, closed ; calyx short ; cavity narrow, acute ; stem long, slender ; core medium to large, round or cordate, closed, meeting the eye ; seeds numerous, angular, or plump ; flesh



WHITNEY'S No. 14.



WHITNEY'S No. 20.

breaking, juicy ; flavor acid. Use, market, ornament, and preserving ; season, September to November.

Whitney's Seedling, No. 14. — Fruit larger than Hislop, ovate-oblong ; surface smooth, light yellow ; stem very long ; flesh yellow, very firm, juicy, rich crab-flavor, thought to be the best of the family. Season, September.

No. 20. — Fruit ovate, larger than Transcendent ; surface smooth, yellow, striped, and, when exposed to the sun, two-thirds covered with red ; flesh yellow, crisp, juicy ; quality pretty good for eating, fine for early tarts. Ripens fourteen days before the large yellow.

Whitney's 24, Deep Red. — (“Cut is one-third too small.”) Fruit globular, regular, smaller than the others; surface smooth, deep red; dots scattered, minute; basin wide, shallow; eye small, closed; cavity medium, acute, regular; stem long; core large, regular, closed, not meeting the eye; seeds few, medium size; flesh yellow, juicy; flavor acid. Use, ornamental and table; quality pretty good; season, October, November, or longer. “Valued for its color and keeping qualities.”

These are all that Mr. Whitney recommends among his seedlings that have fruited; and they are numerous. The others, like most of the seed-



HYSLOP (St. Paul, Min.).

HYSLOP (Rochester, N.Y.).

lings exhibited, show very little change in appearance, or season of ripening, from their progenitors.

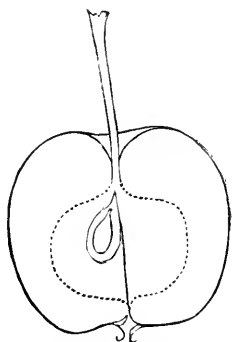
Marengo Winter Siberians. — Received from Mr. Charles Andrews, Marengo, Ill.

No. 1 *Marengo* (syn., *Marengo Winter Crab*). — Fruit globular, truncate, regular, or slightly flattened on the sides, one of the largest of its class; surface smooth, yellow, blushed or covered crimson; dots minute; basin shallow, folded; eye small, closed; cavity medium, regular; stem long; core large, closed, meeting the eye; seeds few, small, plump, light

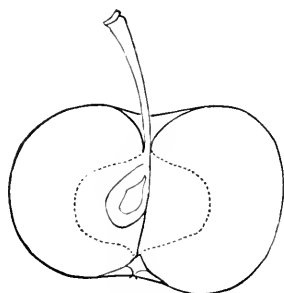
brown ; flesh yellow, firm, rather juicy ; flavor sub-acid, aromatic. Use, kitchen and dessert ; quality good ; season, winter, and till spring in the North.

This variety promises to be of great benefit to our Northern settlers, as it will extend the season for several months. Though in more favored climes it may be despised by the fastidious as only a crab-apple, yet in hyperborean regions the emigrant will welcome its presence with delight as a passable tree, an abundant crop, and good winter-fruit for both dessert and culinary purposes.

The Marengo was described by Mr. Elliott in "The Horticulturist" for May, 1868, p. 136. He calls it "quite rich and quite good" for those who live where Jonathan and Fameuse cannot be grown and kept ; "but,



WHITNEY'S No. 24 (deep red).



LADY CRAB.

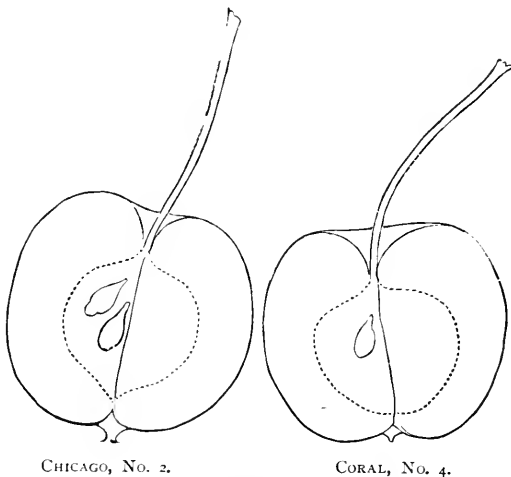
for the extreme North, it may prove as valuable as the Shockley is to the Southern States."

No. 2 Chicago (syn., *Chicago Winter Crab*). — Fruit oblong, regular, not large, but "the specimens are under size this year ;" surface smooth, yellow, blushed and obscurely striped light red ; dots rather small ; basin shallow ; eye small, closed ; calyx reflexed ; cavity medium, regular ; stem long, slender ; core medium, closed, meeting the eye ; seeds numerous, long, angular ; flesh yellow, firm, juicy ; flavor almost sweet, rich, agreeable ; quality pretty good for eating. Use, kitchen ; season, September, October, and later.

No. 4 Coral. — Named from the village near which it was produced ; equally applicable to its color. Fruit globular to oblong, regular, of good size ; surface smooth, yellow, blushed scarlet ; dots numerous, gray or

fawn ; basin shallow or none ; eye small, closed ; calyx reflexed ; cavity medium, wide, regular ; stem long, slender ; core oval, closed ; seeds few, plump, dark ; flesh yellow, breaking, juicy ; flavor rich, sub-acid. Use, dessert and kitchen ; quality good (“pronounced to be the richest crab yet known”) ; season, “all winter,” and “till February.” This variety, like the Chicago, has been “over-fruited for some years ; and the apples are under-size this season,” as represented in the cut.

Lady Crab (syn., *Pyrus baccata fructa nigra*). — From A. M. Lawver, South Pass, Ill. ; an imported variety. Is presented here, not as a Siberian, but rather as a contrast to that class of apples, and as a sample of another



CHICAGO, No. 2.

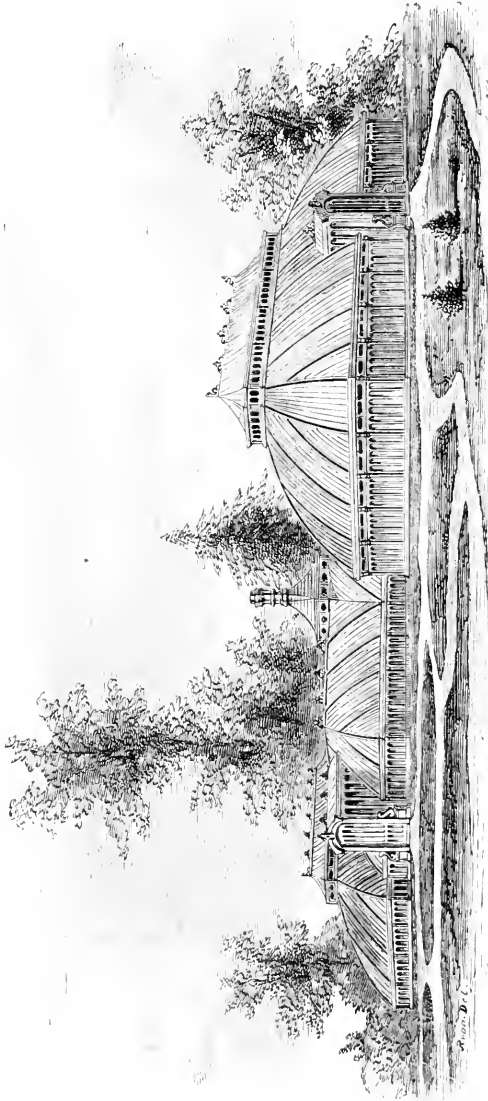
CORAL, No. 4.

species, or a sub-species, of the *Pyrus malus*, — that from which our common apples are derived. Mr. Lawver thinks this “cannot belong to the Siberian family. It resembles the Lady Apple in form, and manner of bearing its fruit in clusters. Tree more spreading ; bears early and profusely : a tree in my garden, three years planted, bore a half-bushel this season. There is no resemblance in tree to the Siberians.”

Fruit small, oblate, regular ; surface smooth, shining, deep red ; dots scattered, fawn ; basin wide, shallow, regular ; eye small, closed ; cavity regular ; stem long ; core medium, closed ; seeds few, large, angular ; flesh whitish, soft, juicy ; flavor mild, sub-acid. Use, table and ornamental ; quality good ; season, September and October south of latitude 40°.

CHAPTER ON GREENHOUSES.—No. IV.

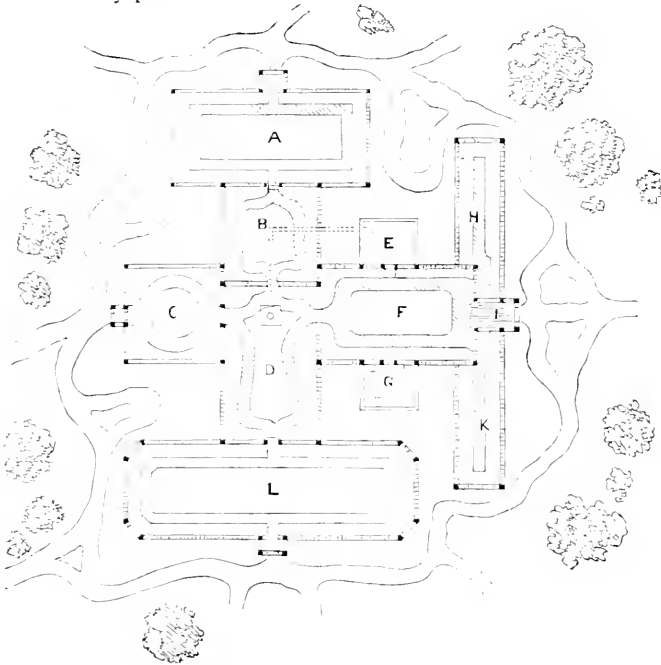
FOR the illustrations of this number, I give the designs of a range of



houses on a more liberal scale than those before presented. They have

the essential qualities of being unique in design, compact in their arrangement, and economical in their working.

This range is designed for Edward S. Rand, jun., for his estate of Glen Ridge, Dedham, about six miles from Boston ; and is to be erected a short distance from the residence, in full view from the front. An upland meadow, with a gravel subsoil, as affording perfect drainage, was selected as being most desirable, owing to its being sheltered on its north and west sides by the dwelling, and by some large trees that would effectually break the prevalent winds. The approach from the road being necessarily of a circuitous form, it was desirable that some plan should be adopted that would present a pleasing aspect on all sides. It was also desirable not to obstruct the view from any point.



For this place, this plan was designed. In its external appearance, the most prominent feature is the cold-vinery (L). Being of the curvilinear form, its ornamental sash and handsome entrance, with the cupola rising in graceful lines, present a very easy and pleasing appearance, and prepare the mind for the freedom of taste and the enjoyment of the pleasures within.

Adjoining the cold-vinery west are the plant-houses (B and D); from which, on its north and south sides, a wing is extended (F and C).

That on the south side has an ornamental front, with inner doors to break the winds on entrance. That on the north side will be the principal business-entrance, being the nearest to the dwelling.

This is in form of a handsome gable, with suitable doors to conform to the rest.

Adjoining the plant-houses on the west is the forcing-vinery (A), running north and south. This also on its west side has a handsome entrance, and similar to its east and south fronts. On the north end of the north wing, running west, is a low house with side-sash (H), with straight rafters, and covered with sash. Also running east is a low house without side-sash (K). Both these wings were made as per designs in December number of "The Journal of Horticulture." On the outside, at the junction of the north and south wings, is a cupola, of sufficient height to receive a reservoir, or cistern, for water. The sides of this cupola are of glass, that the lightness and easy appearance may not be destroyed. The roof of this cupola is carried up in easy and graceful lines to receive and support the ornamental chimney-top, as shown in the elevation.

In the areas formed by the plant-houses on the north side is the potting-room on one side (G), and the fire and coal room on the opposite side (E). These are excavated of sufficient depth, that the roof, which is of hip-form, will start from near the ground. That there may be no obstruction of the light to the plant-houses, a break is made in the roof, in the form of a cupola, with sashes on its sides for ventilation. The rest of the roof is of glass for light, finishing with a handsome ornament at the peak for a finial. This completes the external appearance, and screens from outward view all that is unsightly or objectionable around a greenhouse; and gives character to the structures, that adds much to the grandeur of the place.

In the internal arrangements, there is an entrance from the four sides. In that from the vineries you cross on a level of the borders; and, from the door opening into the plant-houses, you step down two and a half feet to the walks, as shown on the ground-plan.

At the north end from the business-room, and from the south entrance at the inner doors, you step down in a similar manner.

The plant-houses, being on a level, are two and a half feet lower than the borders of the vineries. From the cold-vinery west is the greenhouse proper (D). This is for the general collection of greenhouse-plants that are grown in the ordinary temperature of from fifty to sixty degrees. This room is fitted up with side-shelves about twenty-four to thirty inches wide. The centre is one shelf about twenty inches wide, and one broad platform for the stage. These are made a little serpentine in form ; thus giving it a more easy and natural appearance. The side or front shelf is made of matched lumber, with a band on its edge, rising about one inch. This is filled with clean white sand to set the plants upon. The effect of this is to give the plants a much cleaner and neater appearance, and preserves the plants in much better condition. At the west end of the greenhouse is the hot or dry stove-house (B) for plants that require more heat than the ordinary greenhouse. It should be kept at from sixty to seventy degrees, or even higher for particular classes of plants. Moisture, if required, is obtained by means of vapor-pans placed upon the pipes. The shelving of this house is similar to the greenhouse, varied according to the plants cultivated. The south wing (C) is used as orchid-house and fernery. The front shelf is made similar to those described. The centre is either formed with a basin of water under the whole, and covered with rustic rocks described in former numbers, or the same rocks used and packed in prepared soil, laid as irregularly as possible, with a small pipe carried up in centre, the rocks with a small basin formed at top to receive the water. The overflow, being carried in the narrow channel in a circuitous manner around and amongst the rocks, is wasted away at the outlet, or received in a basin to be used in watering. Around the channel the ferns and kindred plants are planted, and the rocks are placed between them ; some being placed to serve as stepping-stones, the front shelf being used for pot-plants ; those of a climbing nature being suspended from the framework of the house. The plants in the centre-bed not being of a very tall growth, the occupation of the framework with suspended plants is not objectionable. Any required degree of moisture is obtained by means of water, and from the pans placed upon the pipes for heating. A few dead stumps of trees, judiciously placed, do not mar the arrangement.

The north wing (F) is arranged for a camellia-house, the centre being

formed in a bed with suitable soil, and the camellias are planted in it. The uniformity of the plants, with the healthy and vigorous growth and the superiority of the flowers, are a sure guaranty that this is the proper treatment. The front shelf is kept for plants in pots. From this apartment, on each side the width of the shelf, is the entrance to the fire-pit and potting-room. The fire-room is made large enough for boiler and for the storage of coal. The potting-room is of size large enough to afford ample room for the storing of pots and soil. Benches are placed on three sides, under which are stored the different soils and the pots. From the fire-room a flue is carried across into the greenhouse, along the centre, by the dotted lines, to the centre of the cistern to which it rises, passing through and into the ornamental chimney-top outside.

From the camellia-house on the north end is the entrance to the rose-house. This is fitted with one path in the centre: each side is a prepared bed. The rose-bushes are planted in the soil.

The roof of this house is made in sashes of suitable size, and made to take off in the summer-season, and replaced on approach of cold weather. On the opposite side is the entrance to the propagating-pit. This is fitted as described in the December number.

The cistern in the cupola of the plant-houses is kept full of water by means of a ram or water-works of any kind, and kept at a uniform height by means of a float-valve. This cupola receiving all the heat of the house around the tank, the water is rendered quite tepid. An abundant supply of water fit for use at any time is always accessible. From the cistern, the water is taken in a one-inch pipe down to the floor; from there under and along the walks to the different places in each apartment, to which a three-fourths hydrant-bib is attached. From this a piece of three-quarters hose about sixteen or twenty feet in length is sufficient to water and syringe all parts of the building.

In the location of this range, the land being slightly hollowing, the piers for the vineries were started from the surface, and carried up two and a half feet. The soil being coarse gravel, the drainage was good.

The walls for the plant-houses are built on the same level; the borders of the vineries being built upon the surface of the ground, and carried out in the form of a terrace some fifteen feet; the terrace being extended

around the plant-houses, which make a uniform level of the sills. This leaves the inside of the plant-houses two and a half feet deep without excavation.

The terrace outside gives shelter to the plant-houses, renders them of more equitable temperature, and gives a character to the whole that is desirable.

The vineries have one broad path around the outer, which enables you to view the vines and fruit without trespassing on the borders. They are intended for one row of vines around at the sides, leaving the centre for cultivation in pots, or otherwise, as may be desirable. They are wired horizontally in the usual manner.

ƒ. *A. Lord.*

SYRACUSE, N.Y.

ABUFILON VEXILLARE.

THIS pretty plant, also known as *A. Mesopotamicum*, is well suited for house-culture. A small plant grown in a southern window was never out of bloom from December to April. The rich contrast of red, clear yellow, and black, or deep purple, afforded by the flower, is always attractive. As a summer-bedder, the plant has not answered our expectations. It grows to foliage and gives few flowers in rich soil, and in poor soil refuses to grow at all. Its chief value is as a house-plant.

BULBOCODIUM VERNUM.

THIS lovely little spring-flowering bulb is most desirable as supplying a new color (light lilac) in the spring-border. It contrasts well with the crocus; opening with the earliest varieties, and continuing long in bloom. Give it a rather sheltered situation, with a southern exposure, and it will come up every year, requiring no further care. It is sometimes called in catalogues *Colchicum vernum*.

A CHAPTER ON LAWNS.

By JOSEPH BRECK, Ex-President of the Massachusetts Horticultural Society.

A FINE lawn is indispensable in landscape-gardening; or, I might say, on every patch of ornamental ground, however small it may be. Even a small quarter of fine grass, without any ornamental embellishment attached, is desirable for every family who possess a small homestead, if for no other purpose than for the children to gambol upon; or, as the fashion is now, for a croquet-ground. To have a bright spot of fine, deep verdure through the hot months of the summer is always pleasing to the eye, and refreshing to the senses, especially when on a larger scale, where there is room for trees, shrubs, and flowers tastefully disposed by the landscape-gardener. The lamented late A. J. Downing, Esq., says, "With such a lawn, and large masses of trees, one has indeed the most enduring source of beauty in a country residence. Perpetual neatness, freshness, and verdure in one, variety and grandeur in the other, — what more does a reasonable man desire of the beautiful about him in the country? Must we add flowers, exotic plants, fruits? Perhaps so; but they are all, in an ornamental light, secondary to trees and grass, where these can be had in perfection. Only one grand element is needed to make our landscape-garden complete, — *water*. A river or a lake, in which the skies and the 'tufted trees' may see themselves reflected, is ever an indispensable feature to a perfect landscape."

All these elements are to be seen in the extensive and highly-ornamental grounds of H. H. Hunnewell, Esq., of Wellesley. Nothing can excel the beauty, deep verdure, and velvet-like appearance of his well-kept grass, set off and contrasted with skilfully-arranged groups of trees, shrubs, and flowers; and, to complete the landscape, a noble lake, with irregular shores, and a densely-wooded forest on the opposite side.

The late Thomas Lee, Esq., of Brookline, Mass., prided himself on his extensive and well-kept lawn, on an undulating surface, always presenting a carpet of the deepest verdure even in the hot months of summer. It was always a great pleasure to visit this place, and walk over this beautiful, quiet spot, with the enthusiastic proprietor, and look at his rhododendrons,

azaleas, kalmias, and other native shrubs and plants, of which he was very fond, which skirted this enchanting place. Trees, shrubs, and grass he gloried in, but especially the *grass*.

I have often heard it remarked that our climate was too dry and hot for such beautiful turf as is to be seen in England. I have never seen an English lawn: but I have seen the places I have alluded to, and hundreds of others in our suburban towns; and I know there is such a thing as to have a lawn in perfection in this climate through the whole of the season, however hot or dry, if the right course be taken.

And now the question is, *How can a fine lawn be made?* Well, a fine lawn cannot be obtained, as some suppose, by sowing coarse grass-seeds on an unprepared soil, however rich the soil may be, the primary object being to obtain a crop of hay. This is impossible: the hay-crop must be sacrificed, and the ground prepared in a suitable manner. "*How to obtain a fine lawn,*" Downing says, "is a question which has, no doubt, already puzzled many of our readers. They have thought, perhaps, that it would be quite sufficient to sow with grass-seeds, or lay down neatly with sods, any plat of common soil, to mow it occasionally, to be repaid by the perpetual softness and verdure of an English lawn. They have found, however, after a patient trial of several seasons, that an American summer so bright and sunny as to give us in fruits almost the ripeness and prodigality of the tropics, does not, like that of Britain, ever moist and humid, favor the condition of fine lawns." Mr. Downing, who has been my guide when directing others, whose suggestions I have found to be correct when faithfully followed, is now, after many years of experience and observation, still the best authority to which I can refer in relation to the formation of durable, ever-green, and beautiful lawns. I know that it is not impossible to have a fine lawn in any part of the Northern States of the Union. Now listen to what Downing says ("for, although dead, he yet speaketh"): "*Deep soil, the proper kind of grasses, and frequent mowing.*"

"First of all for us, *deep soil*. In a moist climate, where showers or fogs give all vegetable nature a weekly succession of baths, one may raise a pretty bit of turf on a bare board, with half an inch of soil. But here it does not require much observation or theory to teach us, that, if any plant is to maintain its verdure through a long and bright summer with alternate

periods of wet and drought, it must have a deep soil to extend its roots. We have seen the roots of common clover, in a trenched soil, which had descended to the depth of four feet! A surface-drought or dry weather has little power over a plant whose little fibres were in the cool, moist understratum of that depth; and a lawn which is well established on thoroughly trenched soil, will remain, even in midsummer, of a fine dark verdure, when upon the same soil, untrenched, every little period of dryness would give a brown and faded look to the turf. The most essential point being a deep soil, we need not say, that, in our estimation, any person about to lay down a permanent lawn, whether of fifty acres or fifty feet square, *must* provide himself against failure by this *groundwork* of success.

“Little plats of ground are easily trenched with the spade. Large lawn-surfaces are only to be managed with the subsoil-plough.” I will not follow this highly-esteemed and lamented author any farther, word for word, but state a few important particulars. The autumn or early winter is the best time to prepare the ground; the whole surface to be entirely cleared of the smallest stone. Manure, if necessary, should be applied while subsoiling. Very rich soil is not desirable, as it causes a strong and coarse growth; the soil to be good, and not rich. If the land is very light and sandy, a mixture of loam or clay is recommended. As early in the spring as it is in a friable, working condition, stir it lightly with the plough and harrow, and make the surface smooth as possible: we do not mean level; for, if the ground is not a flat, nothing is so agreeable as gentle swells or undulations. But quite *smooth* the surface must be.

“Now for the sowing; and here a farmer would advise you to ‘seed down with oats,’ or some such agricultural precept. Do not listen to him for a moment. What you desire is a close turf; and therefore sow nothing but grass: and do not suppose you are going to assist a weak-growing plant by sowing along with it a coarser-growing one to starve it.

“Choose, if possible, a calm day, and sow your seed as evenly as you can. The seed to be sown is a mixture of red-top (*Agrostis vulgaris*) and white clover (*Trifolium repens*), which are hardy, short grasses, and, on the whole, make the best and most enduring lawn for this climate. The proportion should be about three-fourths red-top to one-fourth clover. The seed should be perfectly clean. Then sow *four bushels of it to the acre*; not a

pint less, as you hope to walk on velvet ! Finish the whole by rolling the surface evenly and neatly.

“A few soft vernal showers and bright sunny days will show you a coat of verdure bright as emerald. By the first of June, you must look about for your mower.”

Now, in relation to the proportion of seed, I differ a little from Mr. Downing. Four bushels is the right quantity ; but twenty pounds of white clover in that quantity is sufficient. We do not sell the common red-top for this purpose. Mr. Downing speaks of it in another article as “*Bent-grass, Rhode-Island Bent, Improved Rhode-Island red-top, or Borden’s-grass.*” It is short, thick, and fine ; and it endures for years.”

A correspondent of “The Horticulturist” says, “Its appearance is like that of red-top, but much smaller, and, of all grass, best suited to a lawn in the Northern States.” I notice in a recent agricultural paper the following mixture of grass-seeds for the lawn ; viz., twelve quarts Rhode-Island Bent-grass, four quarts creeping Bent-grass, ten quarts of red-top, three quarts of sweet vernal grass, two quarts Kentucky blue-grass, one quart of white clover = one bushel ; and from four to five bushels to the acre. Now, I do not believe this mixture is so good as Downing’s. The blue-grass is no doubt valuable for the lawn ; but I prefer, after long experience, the Rhode-Island Bent and white clover.

Had Mr. Downing lived to see this day, he would not have said a word about lawn-scythes. It was a laborious task to mow over a large lawn every ten days with this implement.

Now, reader, it is not necessary for you to look about for a mower, nor go in search of a lawn-scythe ; or, if you have one, you can dispose of it as it is said Daniel Webster did with his. When a boy, this distinguished statesman (*as the story goes*) was at work with his father in the hay-field, mowing. The morning was hot : the boy, lazy, and tired of the drudgery and labor, pretended that his scythe did not hang right. His father altered it several times to try to suit him ; but still his scythe did not hang right : when his father, out of patience, replied, “Daniel, hang it to suit yourself ;” which he did by hanging it on the nearest tree. Now, you can dispose of your lawn-scythe in the same way, or any other way to suit : you will have but little use for it for the future. You may also stow away in your lumber-room

your old cumbrous English lawn-mower, of pony or two-men power, as nobody will use them who can obtain "*Hill's Patent Lawn-Mower.*" This implement is simple in its structure ; not liable to get out of repair ; can be worked by a boy, who can do as much work as two men with a scythe ; is cheap ; and leaves the ground in as good order as any other machine. Hundreds of these have been sold the past year, and have given perfect satisfaction. One gentleman says, "This lawn-mower has, on trial, far exceeded my expectation. It does the work beautifully, and without excessive labor of one man. I have about an acre of lawn, and the mower is now an indispensable article. The turf was a beautiful green all the season, having the tread of a Wilton carpet ; and a casual observer would not have perceived, on the day following clipping, that the grass had ever been cut." The machine leaves the clipping on the surface. Another gentleman says, "I am so well pleased with it, I would not certainly be without it for three times the cost : first, because it will do the work in one-third the time it can be done with a scythe ; second, because it leaves the lawn so smooth and evenly cut, which cannot be done with a scythe ; third, because the iron roller following the cutter keeps the turf compact and perfectly level."

Now for top-dressing the lawn. Downing recommends a bushel (about seventy-five pounds) of guano and three bushels of ashes to the acre, to be applied in March or April, when the soil needs but little stimulus. I recommend for grass that needs heavy manuring two hundred pounds of guano and four hundred pounds of ground plaster to the acre, to be well incorporated before using, breaking all the lumps, and suffering it to remain a fortnight in some place secure from wet ; and apply it the same time as recommended above, and never put it on as late as the last of May or June, nor during the heat of summer. Rough manure should be applied in autumn, raking off all the coarse, strawy portion in the spring. A gentleman in a neighboring town, before leaving his country residence for the city, had his lawn coated over with night-soil ; which was such an insufferable nuisance, that the neighbors (as well they might) called upon him, to abate it. He had done it without consideration, and was willing to be at any expense to rectify the mistake. He called upon the writer to know what could be done in the case ; who recommended him to cover it

with ground plaster without any stint. He applied about two tons to as many acres ; which had the desired effect.

With the directions given in this article, I will warrant to any gentleman what his eyes will delight to look upon, and his feet to tread all the season.

PINE GROSSBEAK.

THE number of these birds that have visited the Canadas and various parts of New England during the winter has been a subject of general comment. So far from being rare, or occasionally seen as stragglers, as they usually have been, they appear in frequent flocks of twenty or thirty together, foraging about gardens and orchards, feasting on the decaying fruit and the seeds contained therein, and, we are sorry to add, finding an acceptable morsel in the blossom-buds of the pear and apple.

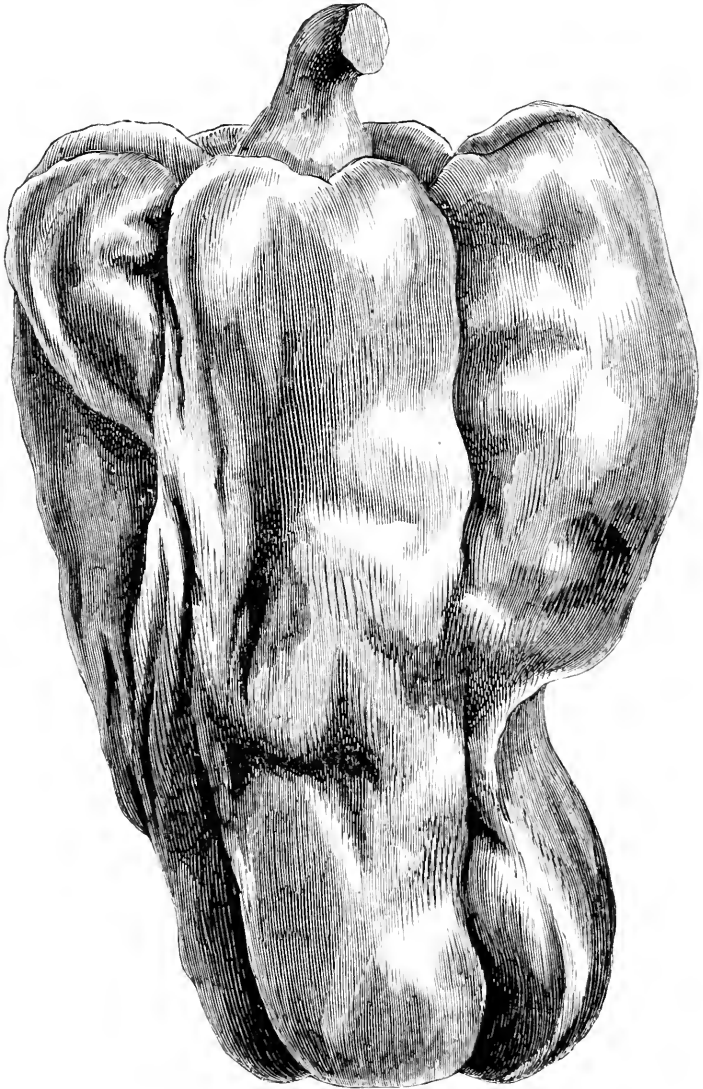
Not having the fear of man before their eyes, they pursue their labors with the most provoking indifference to all efforts made to check them in their work of destruction. Sods and other missiles cast among the branches they appear to regard as something curious or amusing ; and the sound of our voice had as much influence as the wind that swayed the branches on which they were resting.

In view of their extreme beauty, and a certain archness of air and manner, that had in it so much of the "hurt me if you dare, we have nothing to fear from *you*," we could resort to no harsher method. Our only alternative was to clap our hands, beg them to take once for all whatever they desired, and beseech them to divide the honors and expense attendant on their sojourn in New England by visiting some other section.

Fearing Burr.

NEW PEPPER.

Monstrous.—This variety is of French origin ; and, for many of the pur-



poses for which the pods or fruit of this plant are used, it has no superior.

It was introduced to notice by the Messrs. Hovey & Co., and exhibited by them for the first time at the annual exhibition of the Massachusetts Horticultural Society, in September, 1867, where, from its great size and other promising qualities, it attracted considerable notice.

The plant is two feet and upwards in height, strong and vigorous; stem stout and branching, with dark-green foliage; the pods are of mammoth proportions, often measuring five inches in length, with a diameter of four inches; color dark green; form irregular; flesh thick, with a hard and firm texture, and sufficient pungency to make a first-rate pickle, as we can testify from our own experience. It has so much substance, that it can be kept in salt without going to pieces; as many of the large, thin-fleshed varieties are liable to do, especially if gathered before they become sufficiently mature.

The variety is late, and, where the raising of seed is an object, should be sown by the middle of March in a hot-bed prepared for the purpose. If the sowing be delayed until April, a fair crop of the green pods may be expected suitable for picking, but no seed. We consider this pepper a valuable one, and worthy of cultivation.

C. N. B.

NEWTON, February, 1869.

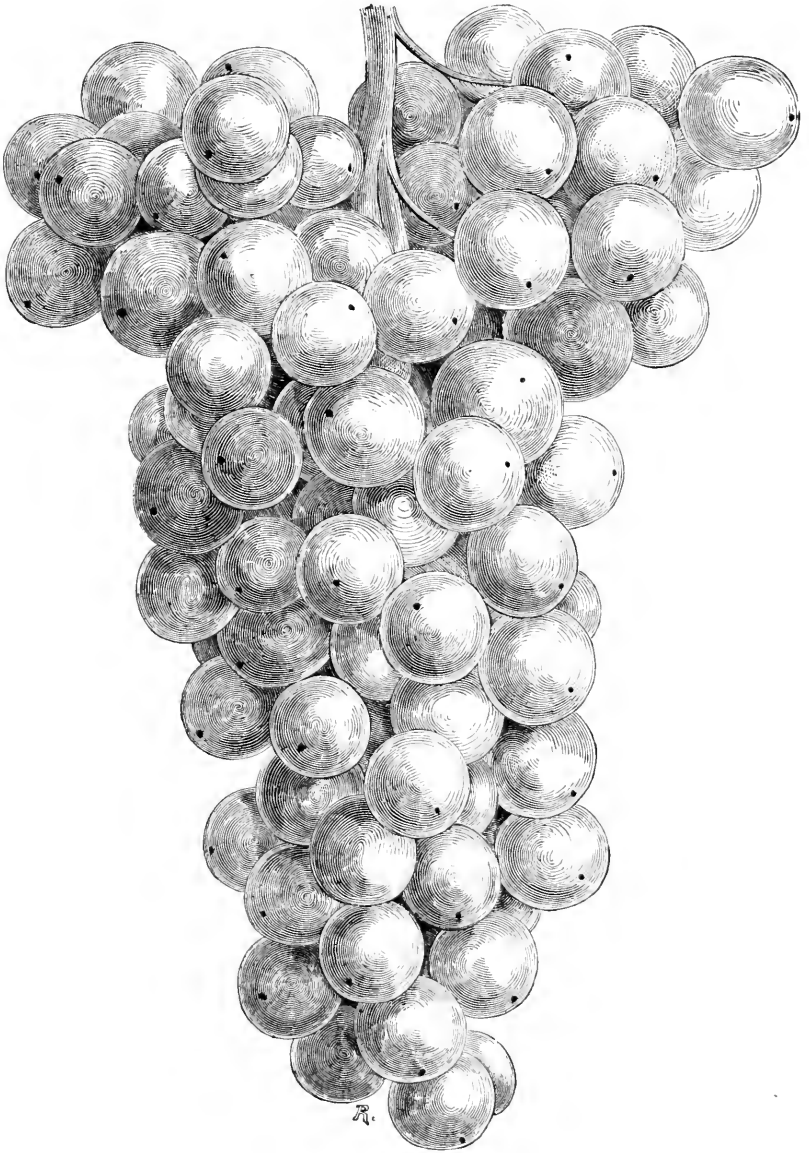
THE CROTON GRAPE.

THE Croton Grape, which we figure this month, was grown by Stephen Underhill of Croton Point, N.Y., who favors us with the following description:—

“The white grape named the ‘Croton’ was raised, with a number of others, from Delaware-seed produced by fertilizing the blossom of the Delaware-vine with pollen from the Chasselas de Fontainebleau, in the open vineyard. The seed was planted in the spring of 1863, and the resulting seedling bore its first fruit in 1865. The vine has borne good crops every year since, ripening with the Hartford Prolific. It is a vigorous grower, and holds its foliage remarkably well, preserving its leaves the present season among Isabella-vines that had lost most of theirs.”

Several of Mr. Underhill’s seedlings, including the Croton, were shown by their originator at the last annual exhibition of the Massachusetts Hor-

ticultural Society, and attracted great attention, as well on account of their



size and beauty as on account of their excellent quality.



MR. EDITOR, —You will not be surprised, that, having been a constant reader of your Journal from the beginning, I have been impelled to put on paper some of my ideas in regard to your last number ; and, if acceptable, perhaps I may hereafter send you my views of future numbers.

And, first, let me rejoice with you and all your readers over the re-appearance in the field of the veteran who has so long stood at the head of American pomologists. Here we have an account of the notabilities of Southern horticulture, such as could only have been given from actual observation, by Mr. Wilder and the keen-eyed horticulturists who accompanied him. Some of his accounts are rather startling to us among our frosts and snows. Think of a camellia-tree in the open air spreading twenty-five feet, and bearing ten thousand flowers ; and a Cloth-of-Gold rose covering one-fifth of an acre of wall !

And then, too, imagine a grape-vine whose stem is six inches in diameter, and whose branches cover a trellis forty feet square ! Why, sir, it makes one ask in all seriousness whether the vine is really hardy with us, or adapted to the climate of New England and the cooler sections of the United States ; for I confess the statement produced a twinge of doubt, if not of discontent. After all our efforts for improvement and for the production of hardy, early sorts, is the vine with us to become no nearer such a specimen than it is at present ? I don't like to think of it.

Cannot you, Mr. Editor, induce your Southern friends to tell us more about the wonderful products of that region, to which so many eyes are now turned ?

The article on "The Improvement of the Native Plum" is most timely ; for, at the rate they go on, our best plums will soon exist only in history. Our native plums are not more inferior to the Green-Gage than was the Sloe, from which the

Green-Gage sprang ; and nothing but perseverance is needed to produce varieties as good as that queen of plums. Is the Chickasaw Plum hardy at the North ? I do not know that it has been tested ; but, even if tender, that should not deter us from experimenting with it, for some of its progeny may be hardy. Besides the kinds named by Mr. Adair, the Louisa Plum, exhibited by Mr. Husmann at the St. Louis meeting of the Pomological Society, is probably a variety of the Chickasaw. There is no doubt of the hardiness of the *Prunus Americana*, or Canada Plum as it is called by nursery-men, who have long used it for stocks. Nuttall says, " By cultivation, it is considerably improved ; and the fruit is sometimes, as Dr. Darlington remarks, ' as large as a common apricot.' In Upper Canada, where it was formerly cultivated, I have seen as many as twelve distinct varieties in the same orchard."

It is, as intimated by Mr. Adair, at least doubtful whether the Myrabolan is an American species : and I think it more than doubtful whether it will form a good subject for improvement ; for, so far as I have observed, both the original kind, and the Golden Cherry, a seedling from it, have been so badly affected with the black wart as to destroy the trees. The Beach Plum (*P. maritima*) is an extremely hardy species, from which I once saved a small parcel of seeds with the hope of improvement ; but other cares prevented the experiment.

Page 151 gives us another of the large full-page floral illustrations which we have so often had occasion to admire. This month we see progress in a new direction : having before figured various hardy greenhouse and bedding plants, we now have a stove-plant (*Allamanda grandiflora*), one which needs heat and moisture, and which but a few can grow. We like it. Cater for all, Mr. Editor, — for the few as well as the many ; but, for every stove-plant you figure, give us half a dozen illustrations of flowers for everybody. Yet this allamanda must be a glorious plant ; and the figure makes us long either for the means to build indefinitely large glass houses, or to have a glimpse at these and other wonders of Brazilian forests. Parlor-plants — oh ! now we are at home, Mr. Editor ; and in our cosy room, with its bright, sunny windows full of foliage and flowers, we hardly envy the sun-burnt Brazilians their allamandas. What have we ? Just what Mr. Rand has told us to grow, — cyclamen : the more the better. How daintily they turn up their rabbit-ears ! and what intelligent, half-impudent faces the little beauties have !

But why not tell us, Mr. Rand (for, of course, you must know it), that the addition of a little soot to the soil will do much to improve both growth and bloom of the cyclamen ?

Mahernia, a lovely plant, and one we cannot praise too highly. Commend us to these pretty and fragrant flowers : they appeal to two senses, and gratify both.

Oxalis, pretty, cheap, easily grown : the clover-like leaves are always pretty. But why not, when on the subject, say a word in favor of the beautiful Western species, *O. violacea* ; and that little gem which carpets the northern woods, *O. acetosella* ? Not parlor-plants ; right, perhaps, not to stray from the subject : but they are hardy garden-plants, and a word of commendation would not come amiss.

So our veteran friend Joseph Breck enlightens us on aster-culture ; and, if

practice makes perfect, no one can do it better. What wonderful improvement the last few years have witnessed! Yet, with all the glorious new varieties, we have a fondness for the old quilled flowers. Plant asters, my friends; they are glorious in the garden; and no flowers are better to cut for the decoration of the parlor in August and September.

Phytolacca decandra,—a new vegetable indeed! But we will tell you, Mr. Editor, how to use this plant. Dig out a deep bed, give it a rich soil, and not one of your “new-foliaged plants” will compare with it in beauty. In England, it is highly valued for this purpose. Try it, ye who are crazy for novelties.

Mr. Strong’s comments on Mr. Cabot’s letter are very just; and so courteously stated, that they must command respect. Patriotism would *almost* induce me to uphold Mr. Strong’s views, even if not quite correct; but, patriotic as I am, I must admit that the English have the better of us on gooseberries. But why can’t somebody do for our gooseberries what Mr. Rogers has done for the grape? Why can’t we have varieties combining the hardiness of the Houghton’s and Mountain Seedlings, with the size of some of the English sorts, and the fine flavor of others?

What will the gentlemen who think fruit cannot be raised in this country as well as in Europe say to the fact, that, in the State of Ohio, the yield of apples was in 1867 ten millions of barrels, and in 1868 nearly as great, and that only three counties in Western New York produced last year half a million barrels, which sold for \$1,500,000? I don’t believe there have been ten million barrels of apples raised in England in a hundred years. Or what will they say to this statement from the report of Covent-garden Market, London, Jan. 1, 1869: “American Newtown Pippins of excellent quality have arrived, and fetch fifty shillings per cask: there are also arrivals of Reinette de Bordeaux and Dieu Donne apples from Bordeaux, realizing from twelve shillings and sixpence to fifteen shillings per cask”?

Mr. Douglass’s style of raising evergreens is a splendid specimen of true Western enterprise, untrammelled by the preconceived notions and theories which are apt to hamper men in older countries. Everybody wants evergreens, especially on our Western prairies: so go on, Mr. Douglass, and make them so cheap and plentiful that everybody can have as many as they want.

In the Journal for February, I noticed a fine illustration of the Boston-market Cauliflower. “C. N. B.,” I perceive, considers it synonymous with the Early Paris, or an improved variety of this; which I am inclined to think is the fact. He also alludes to the difficulty of raising seed in this climate on account of the excessive heat of our summers. Now, I wish to ask my friend “C. N. B.” if American-grown seed will produce as fine cauliflowers as the seed imported from Europe. Or, on the contrary, does his experience prove the superiority of that of foreign production? With most of our garden-vegetables, I am satisfied that American-grown seed is the best.

Has “C. N. B.” had any experience in the raising of broccoli? or is its cultivation neglected for the reason that the cauliflower succeeds better?

Bismarck

THE "TRUE NAOMI RASPBERRY:" WHAT AND WHERE IS IT?— For several years past, the public have heard, from time to time, of a wonderful new seedling raspberry called the "NAOMI," which was claimed to possess marvelous beauty, excellence, hardiness, productiveness, and all other qualifications necessary for absolute perfection.

An enthusiastic individual of my acquaintance, anxious to possess this paragon, invested fifty dollars for fifty plants direct from the originator; but, after growing them a year or two, had his enthusiasm wonderfully cooled by the discovery that it was not entirely hardy, not very productive, not very good, and, in short, so nearly worthless, that he did not regard it as worthy of dissemination. Others who received plants directly from the originator had the same experience.

It was then said that Mrs. Wood had produced several seedlings; and as raspberry-roots of this class, when planted near each other, *will* run together, the Naomi and other seedlings had become so mixed, that, for a time, it was uncertain which was Naomi, and which was not.

It was found, however, that there was *one* among the lot, whose character appeared constant, and which seemed really good; and this one was selected from the mixed rubbish, and another "true Naomi" was ready for dissemination.

Things were about in this condition last summer, when the *ad-interim* committee of the Ohio Horticultural Society visited Cleveland, and made the Naomi a subject of special investigation. The committee were accompanied by several gentlemen who had plantations of the last edition of Naomi, and they with others were considered fully competent to afford the committee all the information necessary to a full understanding of the subject. I think the first plants, in full bearing, and which were declared by the experts to be "true Naomi" beyond doubt or question, were found in a private garden on Euclid Street. The gardener was called, who said it was *not* Naomi, but *Antwerp*, which he had bought for a few cents, while Naomi was worth a dollar each. The committee then visited the grounds of a gentleman near the original stock, and found a large lot of Naomi evidently a good deal mixed, containing, however, a few plants resembling the Euclid-street variety. We then visited the original stock, and found about the same mixed condition of things as at the latter place. The venerable Dr. J. P. Kirtland was subsequently visited; and his "Naomis" were found apparently unmixed, but of the variety (or one of them) now regarded as "bogus."

At this stage of the investigation, I confess that I began to have serious doubts as to there being any "true Naomi" of any special value; for I did not believe this latter-day Naomi was a *new* variety at all, but that it was either *Franconia*, or some kindred sort. A portion of the committee visited Collamer, a few miles east from Cleveland, the next day, where two gentlemen had large plantations of the new and "true Naomi," which were identical with the Euclid-street variety, but, like this latter plantation, *were not derived from the originator of the Naomi*, but from other parties, claimed to have obtained plants many years ago from her grounds.

The more I investigated, the stronger became my doubts ; and, some time after my return home, I received a letter from Dr. Kirtland, in which he expresses the belief, "after careful examination of the subject," that the raspberry we saw at his place is the seedling designated by Mrs. Wood as the NAOMI, and "that the *true* NAOMI, as claimed by Messrs. Elliott, Hall, and others, is no other than the old RED FRANCONIA ;" probably descendants of plants distributed by the doctor himself many years ago to Mrs. Wood, and others from whom the *new* Naomi has more recently been obtained.

At the annual meeting of the Ohio Horticultural Society at Columbus, in a discussion upon the Naomi, I spoke of Dr. Kirtland's letter ; to which Mr. Elliott replied, that the *Naomi*, or the variety now recognized as such, was so exactly identical with the Franconia, that it was impossible to distinguish them by wood, fruit, or foliage. Still he did not regard them as the same, as the Naomi was hardier in winter.

As to the hardiness of the Franconia, I will remark, that it has been found to endure severe freezing here better than any of the Antwerp class of raspberries except the Clarke and Kirtland, and to stand the cold of winters of ordinary severity without protection.

From the facts above stated, I have little doubt that the plants originally sent out by Mrs. Wood were her seedlings mixed somewhat with the Franconia. These plants were soon discovered to be mixed ; and the Franconia, being the best of the lot, was selected from the others, and believed to be "TRUE NAOMI." Other parties may have got the seedlings unmixed ; and, as they would in that case have another "true Naomi," confusion and difficulty arose in determining the truth of the matter.

Now, if a seedling has been produced so exactly identical with the *Franconia* that they cannot possibly be distinguished by appearance, how are the public to be guarded against having the Franconia imposed upon them for this seedling ? In conclusion, I must say, I see no propriety in introducing this so-called Naomi as a *new* variety without more positive proof that it is distinct, and also that it is an improvement. Both of these points I regard as exceedingly doubtful.

George W. Campbell.

DELAWARE, O.

THE NAOMI RASPBERRY. — *Its History, Character, and Value.* — The Naomi Raspberry promises to be one of the leading novelties of the horticultural world the present year. As it is beginning to be advertised quite extensively, and had its origin in this section of Ohio, I am almost daily receiving letters of inquiry respecting it : hence I give the following as the substance of what is known about it : —

It was produced from seeds sown by Mrs. Gov. Wood of Rockport (now of California), nearly twenty years ago ; and did not attract any particular attention for a number of years, until Mr. F. R. Elliott, observing the beauty and excellence of the fruit, and hardiness of the plant, by the consent of Mrs. Wood, named it *Naomi*, and afterwards published a drawing and description of it in the horticultural journals. In the report of the department of agriculture for 1866, Mr.

Elliott gave a better representation of the Naomi (along with other raspberries), and the following descriptive remarks : —

“ Fruit large to very large, roundish, slightly conical or obtuse-conical ; grains large ; color bright, rich red ; flesh firm and sprightly, rich and delicious ; canes strong, with numerous lateral branches when fruiting, brown, smooth, occasional inconspicuous spines ; leaves broad lanceolate ; very productive and hardy.

“ The Naomi is comparatively a new variety ; but observation of it for about twelve years, during which it has been grown with only good common cultivation, and entirely without winter protection, — each year producing large and profitable crops of very superior fruit, — induces me to place it in the department report, because of the great interest felt at this time in the cultivation of small fruits.”

Such a description, from such authority, of course excited interest in the minds of fruit-growers in various parts of the country ; and, our State Horticultural Society having announced that a first-rate hardy raspberry of the Antwerp class was still a desideratum, the committee of that society determined to visit the gardens around Cleveland at raspberry-time, the past season, for the special purpose of inspecting the Naomi.

The committee consisted of Dr. J. A. Warder, G. W. Campbell, N. Ohmer, D. C. Richmond, N. L. Wood, and M. B. Bateham, with a number of other well-known horticulturists as visitors. They were all greatly pleased with the appearance, quality, and productiveness of the Naomi, and regarded the testimony as to the hardiness of the plants quite conclusive.

This fruit has been grown for ten years or more in a variety of exposures, with no protection, and no injury from the winters, or failure of the crops, and, when sent to the market, commanding the highest price. In order to submit it to the severest test and scrutiny, Mr. Hall, at the suggestion of the committee, put up some boxes of the fruit in the usual way, and sent them by express to prominent horticulturists in Boston, New York, Philadelphia, Rochester, and Cincinnati, during the hot weather of last July ; and the letters received in return show, that, in each case, the fruit arrived in prime condition, the appearance and flavor exciting the admiration of all. These letters are from Marshall P. Wilder, P. Barry, and others.

I am asked how the Naomi compares with other varieties of the same class, especially the *Clarke*, which is admitted to be also of fine quality and hardy. In appearance, and character of fruit and plant, the Naomi resembles the *Franconia* more than any other variety ; but the fruit seems to me firmer and of brighter color, with a little more sprightly flavor : but all who have seen the true *Franconia* when well grown are aware that it is among the very best, only lacking hardiness of the canes, which is possessed by the Naomi. The *Clarke* I have not seen in its best condition of growth and fruitage, — only young plants bearing a half-crop. The fruit is of good color and flavor, and the plants vigorous and hardy, with more abundant foliage than the Naomi ; and hence may be better adapted to warm climates and unfavorable soils. Mr. Campbell exhibited a good dish of the *Clarke* at the meeting of the committee in Cleveland ; and, when compared with the Naomi, the latter berries were a trifle the largest and

firmest. After the meeting, a gentleman who had both varieties in bearing told me he thought the Naomi more productive and superior as a market-fruit.

At the meeting of the State Horticultural Society at Columbus, last December, there was a discussion on raspberries; and, information being called for respecting the Naomi, Col. Richmond of Sandusky, who is an extensive fruit-grower, said he was very much interested as one of the committee who inspected the raspberries around Cleveland the past summer; and, in reference to the raspberry which they called the Naomi, he was in some doubt in regard to the correctness of the name; for he and some of his friends had plants procured as Naomi from the headquarters of that variety, as they supposed, and the fruit is not at all equal to what the committee found at Mr. Hall's and on a small portion of Mrs. Wood's grounds and Mr. Elliott's: and he would say of Mr. Hall's Naomi crop, that it exceeded any thing that he had before seen in this country or in Europe; and he had made the small fruits a study for many years, travelling thousands of miles to visit the most noted growers, and observing all the fruits in the markets. He was satisfied that Mr. Hall's plants had received no extra care or cultivation, and no winter protection.

Mr. Elliott gave the history of the Naomi in substance as in this article; and in reference to the confusion as to the true sort, referred to by Mr. Richmond, he said there had been inexcusable negligence on the part of those having the care of Mrs. Wood's grounds, in not taking pains, years ago, to separate the Naomi plants from the inferior seedlings growing with them, and which obtained such ascendancy in number, that, in procuring a hundred plants for himself, he afterwards found only ten or a dozen of them genuine: hence it was possible that some others got none but the spurious. In reply to the inquiry as to the difference between the Naomi and Franconia, Mr. Elliott said he had both varieties in his grounds; and while there was much resemblance in the fruit, and he thought the Naomi was probably a seedling of the Franconia, there was quite a difference in the superior hardiness of the plant of the Naomi, by which it was able to withstand the winters of Northern Ohio, while the Franconia, like the other foreign varieties of its class, needs protection. *M. B. Bateham.*

NOTE. — Having received the above communications on the Naomi Raspberry, each from a correspondent of the highest authority, and each of which would be entitled to entire confidence were it not for the other, we have thought the best course we could adopt would be to publish both articles entire. — EDS.

BORERS. — Our method of destroying the apple-borer when he is in the tree too far to be reached with the point of a knife or wire: Take a piece of half-inch lead pipe, say three feet long; bend one end to nearly right angles, and fit the same to the borer's hole, the main length of the pipe standing perpendicular; place a tunnel in the top end, and fill the pipe with boiling water: the borers will soon be dead, while the tenderest tree will not be injured by the process.

MEREDITH, N.H.

S. A. Ladd.

THE VERBENA DISEASE. — In the March number, your correspondent, Mr. A. Veitch, seems to be in doubt as to the cause of this disease, and asks for information on the subject. Long experience in the cultivation of the verbena has given me ample opportunity for observation, which has led me to the conclusion that the predisposing cause of the disease is debility in the plant; which condition invites the attack of a microscopical insect, producing the black and crisped appearance which we call "black rust."

Of the presence of this insect any one can satisfy himself by subjecting a portion of an affected leaf to a microscope having a power of three or four hundred diameter: the insect will be plainly seen, having the appearance somewhat, and the motions, of some varieties of water insects.

I have said the predisposing cause is debility, or lessened vitality of the plant: this debility may be caused by uncongenial or exhausted soil, or by violent change of temperature or moisture; in short, any thing that will check growth, and impair the vigor of the plant. In my recent work, "Practical Floriculture," in alluding to this subject, I mention an instance that came under my observation last fall, which of itself proved most conclusively that a lessened vitality of the plant invites the attack of this insect, which produces the effect we call "black rust." In September of last year, I had a lot of about five hundred heliotropes in fine healthy condition, growing in two-inch pots. Requiring a portion of them to be grown larger, about one-half of them were shifted into three-inch pots: these were kept side by side with the unshifted half, and treated in all respects the same. Those shifted grew vigorously and strongly, while the unshifted remained comparatively stunted; and, in two months after, they began to show unmistakable evidence that the insect was at work; and an examination by the microscope revealed them on every plant: while, on those that had been shifted, not a sign of rust, nor an insect, could be found.

For a similar reason, we find, that, when we plant out our verbena-plants in May, by August they get exhausted in producing flowers and seeds, the vigor of the plant is lessened, and the condition inviting the insect is again present. Our practice, then, to remedy this, is to crop off all the flowering-shoots, fork up the soil lightly in and around the plant, and top-dress with a rich compost (rotted manure and loam in equal parts) to the depth of two or three inches: in this new roots are quickly formed, developing a healthy growth, which gives us the necessary soft and healthy shoot that we use for propagation in September.

This is our summer treatment: that for fall and winter entails the same conditions. The cuttings first are taken soft and succulent, *never allowed to wilt*, potted at once when rooted, and cared for throughout, so that *the root is never allowed to get hard by drying*, or the sap checked by any sudden change of temperature. To avoid this, to the best of our ability we keep as near an average temperature of 40° at night as possible; giving ventilation at all times when practicable. In addition to this, all our verbena-houses are fumigated by tobacco at least twice each week. Although tobacco-smoke, I know, will not directly destroy the verbena-mite, yet I am of the opinion, that, if you start with a healthy stock, it will never exist to injure if fumigation is persisted in twice a week. Such is my own experience, where for the last fifteen years I have grown from

fifty thousand to two hundred thousand verbenas annually, with hardly a vestige of this disease to be seen in all that time ; while my neighbors on all sides of me, having the same atmosphere, and using the same soil, have, in a majority of instances, utterly failed, and for no other cause, in my humble opinion, than having been neglectful in using these precautionary measures.

This class of insects is by no means confined to the verbenas or heliotrope : it no doubt infests hundreds of different families of plants. With but a limited examination, we have found it on calceolarias, chrysanthemums, phloxes, pelargoniums, lantanas, pentstemons, and petunias. Whenever the "buzzy" or crisped appearance of the shoot indicated disease, an examination by the microscope revealed the presence of the insect.

Peter Henderson.

BERGEN CITY, N. J., March 20, 1869.

EARLY PEAS IN POTS. — Having the advantage of a great length of glass wall-covering, I made trial of all the earliest peas in cultivation, and took means to have them true from the raisers. They were all sown on the same day, in the same sized pots, soil, and situation. The varieties were Carter's First Crop, Sutton's Ringleader, Dickson's First and Best, Taber's Perfection, Dillistone's Prolific, and Sangster's No. 1. The First Crop and Ringleader showed flower at the same time ; Taber's Perfection and Dickson's First and Best were two days later ; Dillistone's Prolific was evidently spurious, for it was a week later than the other in flowering ; and Sangster's No. 1 was the last. The first dish was gathered from Carter's First Crop and Ringleader ; for they are identical in growth and earliness. Dickson's First and Best, and Taber's Perfection, were only two days later in furnishing their first picking. Sangster's No. 1 and Dillistone's Prolific were eight days later.

The results were as follow : First Crop and Dickson's First and Best averaged only three and four peas in a pod, and came in nearly all at once. By far the best podder and forcer was Taber's Perfection ; for it averaged four and five peas in a pod, which were of good size and well flavored. The sorts I had for Dillistone's Prolific were similar to Sangster's No. 1 ; for they were both ready at nearly the same time, and resembled each other in the size of the pods and in growth.

I had a long, low pit filled with Maclean's Little Gem, which produced by far the finest and earliest peas I have ever grown in May ; in fact, the pods and peas were as large as those produced in summer, and quite of the Marrow flavor. For the future, I intend discarding all the tall early peas for forcing, and only using Little Gem and Tom Thumb, with Advancer for the tallest variety. — *W. Tillery, in Florist and Pomologist.*

EARLY VEGETABLES. — It is stated that the growers of early vegetables in Cornwall, Eng., had great success last year. Upwards of three thousand and six hundred tons of broccoli were sent out of the country during the season. The consignments of potatoes were also unusually large, and the crop was the best and most forward that had been known for nearly a quarter of a century.

EARLY ROSE POTATO. — We hear numerous complaints, that potatoes purchased last season as the Early Rose proved to be spurious. The high prices which were paid, and the ready sale, were temptations which it appears some dealers were unable to withstand. Efforts for redress are rarely successful enough to compensate for the cost and vexation attendant; and those who have been deceived will generally be compelled to make the best of their bargain.

Any *honest* dealer, however, under such circumstances, would be willing to inform his customer as to the source from whence his stock of Early Rose potatoes had been procured, and in so doing might satisfy him that the transaction was an honorable one. If he declines to do this, then a suspicion of unfair dealing would be justly awakened; and we think no complaint should be made if the facts of the case, as well as the name of the party, were made public.

We advise our readers to be cautious with whom they deal. Purchase your plants, roots, and seeds of an honest, reliable man; and such may be found in any city or village. We know of nothing so dear as cheap seeds. Rare seeds have a standard of value as well as those kinds with which the market is fully supplied; and, when any are offered much below the prices of our first-class seed-warehouses, there is a doubt, either as regards their vitality or genuineness.

F. B.

MESSRS. EDITORS, — I lately noticed an article in "The American Farmer," published in Baltimore, with the title of "New System of Growing Roses," and credited to your Journal. I fully agree with the writer, that it is a great improvement on the old practice of close pruning: nevertheless, the "system" proposed is nothing new, whether found in French, English, or American works; as I adopted it in 1826. I even carried it farther than is stated in the above article. At the above date, I laid out a new flower-garden, and wanted to introduce something new and novel. Having two or three figures for roses, the idea struck me of treating them as above described (I had never seen any thing of the kind), and with the addition of covering all the bed with fine moss from the woods, then pegging them down closely on the moss. When coming first in sight of the bed, nothing could be seen but moss and vigorous young wood; but, upon getting nearer, you found the moss completely covered with fine clusters of large, healthy roses. I treated my moss-roses and all alike, and with good success, they being admired by all who saw them.

J. C.

FEBRUARY, 1869.

MR. EDITOR, — It seems to me that the only advantage sought in letters-patent for new plants is already within the reach of every originator of a new fruit or flower or vegetable. The advantage hoped for, I assume, is a temporary monopoly in favor of the originator; and I think he may enjoy it without any patent-law.

If Mr. Smith produces a potato which will mature tubers as big as a goose-egg in thirty days from planting, the public is willing to send orders for Smith's Seedling to Mr. Smith in all cases, though he sells his potatoes for their weight in gold, and somebody else sells the genuine seedlings for their weight in silver;

for the public has every confidence that the originator will not send them any thing but the genuine. Here, sir, I think, is Mr. Smith's chance for a monopoly. He must propagate his own potatoes, and sell at reasonable prices.

I would not be understood to doubt that every man has an abstract right to his new fruit. Certainly he has, if he has a right to his novel and useful mechanical device, or chemical combination, or quack medicine, or book. But I very much fear that some of our horticulturists will weary themselves to procure a patent law which will benefit no one but a new spawn of patent-solicitors.

D. M.

RUSSIAN SUNFLOWER.—In the size of the flower of this new variety, as well as in the general character of the plant, we have been somewhat disappointed. We have seen the common sunflower nearly as large, and the plants quite as tall and sturdy, as those of its Russian relative. The seeds, however, are shorter and thicker, and we think an improvement, did they fill out as well and ripen as fully; which, we are sorry to say, they do not. It is possible that the dry, sultry character of our climate may not be favorable for their perfection; and it may be that it will succeed better after it has been grown with us for a few years.

In Russia its success appears to be complete, and its cultivation quite general. A correspondent of "The Gardener's Chronicle" states that "the seeds form an article of extensive consumption, and that they produce some thousands of roubles every year. In the more southern parts of the country especially, the habit of eating these seeds is almost universal with high and low. Wherever you go, early or late, you continually hear the cracking sound which is produced by breaking these seeds between the teeth. On holidays especially, when people have nothing to do in the way of labor, sunflower-seeds are in every hand, and the walks in the gardens and other places are literally covered with the husks. About a pint of sunflower-seed sells at a penny, and a great many poor make a small trade of it; but all who have a plot of ground grow enough for their own wants, even if they grow nothing else."

Referring to this subject, a correspondent of "The Country Gentleman" states that a gentleman from Cambridge, Mass., while travelling for pleasure in Russia, made a sojourn of a few days at St. Petersburg, where his attention was attracted to a number of persons offering sunflower-seeds for sale in the streets. He found that these seeds were large and sweet, and that they were sold and eaten as generally as pea-nuts are sold and eaten in our cities here. It occurred to him that seeds of this size were rarely if ever seen at home; and some were purchased, brought to this country, and distributed. The plants generally grew very well; and though in less favorable situations the flowers did not attain a large size, yet the seeds ripened fully.

We would only add, that, while we do not expect the sunflower will be grown with us to any considerable extent on account of the value of its seeds as an esculent, the plant is so prolific, and the uses of the seeds for economical purposes are so various, that we consider their production worthy attention.

F. B.

MARSHALL P. WILDER exhibited recently, at the rooms of the Massachusetts Horticultural Society, the foliage and flower of a very rare ornamental flowering-tree named *Agnostus sinuatus*, or *Stenocarpus Cunninghami*, a native of Moreton Bay, New Holland. It is a greenhouse shrub of the largest class; the present subject being eighteen feet in height. Its leaves are from sixteen to twenty inches in length, of a bright, shining green, deeply cut or sinuated, somewhat like the foliage of the oak. The flowers are very curious in their formation. They spring from the old wood, and are borne on stems with four or five large whorls of rosy scarlet, after the manner of the Proteas; to which family it undoubtedly belongs.

STENOCARPUS CUNNINGHAMI. — "So long ago as 1828, the lamented Allan Cunningham discovered this plant on the banks of the Brisbane River, Moreton Bay, which he described as a slender tree of most remarkable habit, without flower or fruit." Of this, Sir W. Hooker remarks, "Had Mr. Cunningham seen its blossoms elegantly arranged in candelabrum-like umbels, clothed with the most vivid orange-scarlet silky pubescence, he would assuredly have ranked it among the most important of his numerous additions to the Australian flora. . . . The handsome evergreen foliage has indeed long recommended this plant to the attention of cultivators; and, now that its beautiful inflorescence is known, the demand for it will be in proportion to its loveliness." — *Paxton Mag. Botany*.

FRUIT-HARVEST OF THE WEST. — "The American Journal of Horticulture" for November contains an article on the "Fruit-Harvest of the West for 1863."

This article conveys the impression of a universal failure of the fruit-harvest throughout the West. In this it does injustice to some favored and protected localities which have had abundant harvests. The statement that the fruit-crop of the West was a failure for the year 1863, is, without doubt, generally correct; but, happily for our credit, this statement is not of universal application.

Your contributor, writing from Illinois, gives a correct summary for his State. Permit me to give a few items from the fruit-region of St. Joseph, Mich. The custom-house record shows that there were shipped from the port of St. Joseph, during the summer and autumn of 1863, five hundred and eight thousand and five hundred packages of peaches, containing one-third of a bushel each; thirty-four thousand bushels of berries; besides large quantities of apples, pears, grapes, &c. The above estimate does not include hundreds of bushels of small fruits and peaches used in home-consumption, or that were canned, dried, and preserved in various ways for the market. This large amount of fruit was mostly grown on the Lake Shore, or immediately about the mouth of the St. Joseph River, within the area of but a few square miles at most. The resources of the country are being rapidly developed, and orchards and vineyards will soon cover the entire face of this fruit-region; and in some future year, as in the last, we hope to supply the markets of Chicago and the neighboring cities at least with cheap and luscious fruit, when the fruit-crop of the West is again a failure.

J. H. L.

PROPAGATING AUCUBAS BY CUTTINGS. — The best time to put in aucuba-cuttings is as soon as the growth is complete and the wood has become firm. They should be inserted in light sandy soil in a cold frame, and the soil made firm about them. A gentle watering should be given, and the lights kept on during the day, and off at night; but in dull weather they may remain off day and night. Let the cuttings have the benefit of slight showers; but protect them from heavy drenching rains. Shade from bright sun should also be afforded. When cold, frosty weather sets in, the lights will be useful for protection; and, in addition, a covering of mats should be given in very severe periods. The lights must be tilted so as to let the cuttings have air, and the latter should be fully exposed in mild periods. The cuttings may be struck out of doors in a sheltered, shady situation; but they will be longer in taking root, and their growth will be slow. From the end of August to October, the shoots will be in a good state for making cuttings: but they may be put in up to the middle of November; and, in that case, many will not root until the following autumn.

WINTERING OLD PELARGONIUMS. — First, as respects some variegated kinds which we wish to keep, and get cuttings from in spring. These we deprived of a few of their largest leaves, and, when the roots were very straggling, cut them in to six inches or so in length; and then we potted singly in small pots (40's), and set them in a slight bottom-heat in frames, admitting air all night, that most of the leaves left might remain uninjured.

In a second case, we took up some good-sized plants which we wish to keep for centres of raised beds or pyramids next season. We find that these are scarcely injured by the frost. As height is an object, we retain them almost at their full height; but to save room we take off all leaves larger than a sixpence, cut the roots if necessary, and place in the smallest pots that we can get them in, and put them under glass. Generally, these make fine plants in spring. They would make fresh roots sooner if they, too, could have a little bottom-heat; but that we could not give them; and, to save room, we wish them to grow very little during the winter.

The third is the most numerous lot, and the plants in this we merely wish to keep. We prune in the heads closely, leaving only a bud or two at the base of each branch. We prune in the roots to about four inches in length; and then we pack these roots closely in boxes, say thirty or forty of the close-cut deer-antler-like plants in a wooden box three feet long by nine inches wide. If the soil is somewhat moist, they will need little watering. — just a little to settle the earth about the roots. To prevent damping, we dip the cut heads in a pot of quicklime. As not a single leaf is left on these cut-in plants, packed as closely as a wood fagot, they will keep anywhere in winter where they will be secure from frost and damp; and will need but little light until they begin to break their buds, which they seldom do with us until March. These plants, first treated with light then, and soon afterwards given more room, so that each plant may grow freely, will make a good show in the flower-garden. This plan, or some similar one, is the best to adopt by those who grow scarlet pelargoniums,

and have no greenhouse or glass-pit to keep them in. Such skeletons need little care in winter. All young plants raised from cuttings must have light as well as be kept from frost.

Editors of "Journal of Horticulture:"—

YOUR correspondent "E. S. R., Jun.," in January number, in an article on "Parlor-Plants," recommends treating *Richardia Æthiopica* a little different from what I would propose. Instead of turning the plants into the open ground in spring "to rest," turn the pots on their side in some shady spot in the open air where the sun's rays will not reach the pots: leave them there, giving no water, till end of August. By that means, they will "rest indeed." About the end of August, turn them out of the pots, shake off every particle of soil from the plant, remove *all* the offsets, pot them in good rich soil, put in a sunny, sheltered spot, and water *sparingly* till they begin to grow. By this method, more and finer flowers can be produced than by planting out the callas in spring, or leaving offsets on plants when repotting in autumn. I would also recommend raising *Primula sinensis* from seed every summer, as the plants are stronger, and the flowers will be as fine if care is used in saving seed, and will save the trouble of keeping over old plants. This does not refer to the double or semi-double varieties.

Thomas Skene.

GAMSONS, Dec. 29, 1868.

NATIVE CYPRIPIEDIA. — Our native *Cypripedia* will bear forcing very well if judiciously applied. Mr. Menand has frequently had *C. acaule* in flower about this season: and he now has a pot of *C. parviflorum* in bloom, with a dozen flowers; and a pot of *C. spectabile* so advanced, that a week or ten days more will develop its flowers.

A gentleman who resides in Cleveland, O., informs me that he grows the native *Cypripedia* with great success in his open garden by excavating a pit on the shady side, a foot and a half deep, and cementing it entirely water-tight, except that a few holes are left on the sides four to six inches from the top. He fills the pit with swamp-muck.

I have succeeded well by planting pots in the open ground, but have never tried the Cleveland plan, which I regard as preferable. When pots are planted in the open ground, a cork should be fitted in the hole at the bottom, and one or two holes made in the sides near the top, so that the surface will be drained while the supply of wet at the bottom is still unexhausted.

C. spectabile especially is such a beautiful flower (equal in delicacy of color and form to most of the tropical orchids), and so easily cultivated, and in shaded pots too, where few other plants will bloom, that I am surprised it is not more generally grown. Roots can be got in abundance in this vicinity; and in April, or perhaps in May, they may safely be removed so as to secure bloom the same season. Very few florists grow our native plants; but Mr. Menand is an enthusiastic botanist, and can always furnish any quantity of roots of *C. spectabile*, *C. parviflorum*, and *C. pubescens*.

G. B. W., Jun.

Troy, N.Y., March 1, 1869.

CULTURE OF HORSE-RADISH. — John Cox, in “*The Florist*,” thus gives his experience in the culture of horse-radish : —

In the course of the spring of the present year, my attention was forcibly arrested by some able remarks on the culture of horse-radish in “*The Journal of Horticulture*” for 1867. The system advocated appeared to me to be so great an improvement on the old one, that I determined to give it a trial, in opposition to our routine method of planting every year a bed to come into use the third year after planting. In the place of digging out trenches, and filling them up, as directed in the article alluded to, I selected a bed, which, last year, was used for the cultivation of ridge cucumbers, having been prepared in the usual way by throwing out a trench about three feet in width, and two feet in depth, which is filled well up with manure, short grass, tree-leaves, or any other suitable rubbish which will generate a little heat. This, of course, was all rotted down ; and, early in April of the present year, I trenched up the middle of the bed, incorporating the soil and rotten stuff together, and thus prepared it for planting.

It appears to me that there are two principal points to be carefully followed out in order to insure success : one is to properly prepare the sets for planting, and the other is to secure a well-prepared bed of rich soil for them to grow in. With regard to the preparation of the sets, at the time of digging up the three-years’ bed, I directed the men to save all the long roots about the thickness of a goose-quill : these I selected as straight as I could get them, and shortened them to the length of a foot. From these every perceptible eye was removed except those close to the top ; and also all the fibres, with the exception of those about an inch from the bottom. Having thus prepared a sufficient number of roots, I made holes nine inches apart in a diagonal direction from the sides to the centre of the bed, sufficiently deep to take the roots without bending ; and into these they were inserted, and the earth pressed down upon them. I then, by way of a catch-crop, planted a row of cauliflowers down the middle, and one on each side of the bed : these did very well.

The bed was planted on the 15th of April ; and in the first week of this month (October), within six months of the time of planting, I have roots equal in size, and superior in quality, to any that I get from the beds of the third year under the old method. I feel sure that I need not enlarge upon the economy of this method of cultivation ; the facts speak for themselves : and, as I have myself proved it practically, I cordially recommend it through the medium of ‘*The Florist and Pomologist*.’ ”

BEES. — Your correspondent “G. G.,” in February number, is needlessly alarmed about his bees injuring his raspberries or any other fruit by “intermeddling with the pollen.” I raise raspberries and bees pretty extensively, and find them mutually beneficial to each other. Every fruit-grower should have enough bees to save the honey, the most valuable part of his fruit-crop, which otherwise is lost.

D. L. Adair.

MR. TILTON, — Allow a subscriber to urge the claims of the hyacinth "Charles Dickens" to all lovers of the beautiful. For years past, I have grown this variety, and now place it before all others for house-culture. The color is delicate porcelain, varied with a darker shade; the bells are unusually large and well shaped; while the odor is more sprightly than almost any other variety, not having that *dead* sweetness peculiar to all.

Last year, a number of my bulbs were mislaid, the Charles Dickens hyacinth among them. When found (Jan. 5), they were immediately potted. The same treatment was given to all; but the Charles Dickens asserted its superiority by blooming full two days in advance of the others: and, at this writing, these same bulbs are showing better trusses than many roots imported this fall, and potted in September.

If any who read this article are induced to plant a few of the bulbs whose good qualities I have endeavored to delineate, I am sure they will feel fully repaid for their trouble by the store of beauty and sweetness their tender care will *surely* bring forth.

Robert Waggoner.

Troy, N.Y., Jan. 19, 1869.

[The variety will bear out all our correspondent asserts. It is good in every way. We have it now (Jan. 25) beautifully in bloom. — *Eds.*]

ARNOLD'S HYBRID GRAPES. — As we have had the pleasure of tasting these new grapes as grown in Canada, and well knowing the difference between the same varieties grown there and here, it may be interesting to know how they compare with our best varieties here.

You must bear in mind that such as Concord, Creveling, Catawba, &c., as grown in your vicinity, would hardly be eaten here, where Creveling and Maxatawny, Clara, Delaware, Iona, &c., are about perfection.

But these hybrids of Arnold's are fully equal, and one variety superior even, when grown in the far north.

It would be useless to describe them, as that has often been done; but if they improve, when brought here, in the same ratio that all northern varieties have done, then we have added to our list five valuable grapes.

Othello for a table grape will become famous in market, on account of its showy appearance, although not equal to some of the others in quality. Autschan will take well both on account of its fine bunch, beautiful color, and excellent quality; Brant for table and wine both; while Cornucopia and Canada are not much behind.

A number of persons in this locality have got vines; so that in a few years you may count on receiving both fruit and wine from here of these very promising varieties, provided your humble correspondent lives so long.

Samuel Miller.

BLUFFTON, Mo., Feb. 6, 1869.

DUCHESSÉ DE BORDEAUX OR BEURRÉ PERRAULT PEAR. — The tree is very vigorous: it makes fine specimens either on quince or free stocks; but the disposition to form fruit-buds is such, that, to have the best trees, it should be grafted on free stocks, when it forms fine pyramids. The fruit measures about two and three-quarters inches in height by three and a half inches in diameter; form roundish, slightly flattened; stem strong, woody, slightly curved, and placed in a large and deep cavity; calyx large, open, irregular, divisions unequal, short, of a clear brown color, placed in a large and deep cavity; skin of a clear green, almost wholly covered with russet, passing to yellow touched with sienna at the time of ripening; flesh very fine, yellowish, very melting, juice very abundant, well sugared, and agreeably perfumed. This beautiful and excellent fruit has the advantage of ripening well, and keeping a long time without change or decay. I have tasted it from the end of November until February, 1866.

This variety owes its origin to chance, having been found among some stocks furnished by M. Perrault, nursery-man at Montrevault, to M. Sécher of Montjean, near Angers. It was called by M. Perrault "Beurré de Perrault," and under this name was presented to the pomological congress; but was christened by M. Sécher "Duchesse de Bordeaux." It was planted in the garden of M. Sécher in 1854, and first fruited in 1857. — *J. de Liron d'Airoles*.

[We extract the above description from the "Revue Horticole," as the variety is now attracting considerable attention. We have seen the fruit in the collection of Hon. Marshall P. Wilder, where it is hardy and productive; but the precise quality is not yet ascertained. The skin is remarkably coarse and granulous. It has been suspected to be an old variety, but proves quite distinct.]

H. M. V. of St. Joseph, Mo., writes, that they "have an excellent country for almost all kinds of fruit. Apples do finely, bear early and abundantly; and the fruit is large, and of most excellent quality. The varieties cultivated are Early Harvest, Sweet Bough, Summer Queen, Red Astrachan, Fameuse, Maiden's Blush, Fall Wine, Rome Beauty, Rambo, Fall Pippin, Ortlely, Rawle's Janet, Winesap, New-York Pippin, White Winter Pearmain, Swaar, and Smith's Cider. Pear-trees are hardy, grow well, bear early, and the fruit is large, and of fine quality; but, in some instances, the trees blight badly. Peaches generally do well; but the trees are likely to be winter-killed. Sweet cherries do not succeed here; the Early Richmond and other acid varieties do well. Grapes have never failed. We can raise such grapes as the Concord, Hartford, Virginia Seedling, Delaware, and Diana, without failure. We are trying many varieties. Grapes are being largely planted here; and, if they continue to do as well as they have for the last few years, wine-making will be one of the leading interests of the State. The wine made here is of excellent quality, and finds a ready market. A hundred thousand grape-vines are now growing in the vicinity of St. Joseph, and the number will be greatly increased this spring."

ASPARAGUS. — We commend to the attention of such of our readers as contemplate making a plantation of asparagus the following experiment, made for the purpose of ascertaining the relative value of old and young roots for planting. The result seems to prove most conclusively the great superiority of plants of the growth of one year over those of more ; and answers, if it does not settle, a question often raised and much discussed. F. B.

Relative Success with Plants of One, Two, and Three Years Old. — There are still many persons who think, that, in planting roots that are two or three years old, they will gather asparagus sooner than if they plant those which are but one year old. To disabuse them of this idea, we shall put under their eyes the results of several experiments which we have made. We planted (No. 1) twelve roots of a year old, (No. 2) twelve of two years old, and (No. 3) twelve of three years old. The results were as follow : —

First Year. — Of No. 1, all had made growth before May 4, and the vegetation was fine. No. 2, ten plants started before May 4, one on the 10th, and the other failed. The shoots were a little stronger than those of No. 1. No. 3, eight plants started before May 4, one on May 12, and the other three failed ; and although, at first, the shoots looked well, they afterwards declined ; and on Sept. 15 they were feebler than those of No. 2.

Second Year. — No. 1, fine vegetation ; shoots strong and regular on the 15th of September. No. 2, good growth, shoots irregular, and a little feebler than those of No. 1. No. 3, growth mediocre ; shoots very irregular, some roots having eight or ten, but all feeble : another plant died after having produced two stems.

Third Year. — No. 1, growth magnificent ; stems measuring on the 10th of May from two inches to three and a half inches in circumference. No. 2, growth passable, but irregular ; some tufts small and weak ; the finest had shoots on the 10th of May not more than two and a half inches in circumference. No. 3, growth very middling and irregular ; some tufts gave off shoots no bigger than quills, and the best reached little beyond an inch and a half in circumference.

Fourth Year. — No. 1, growth remarkable ; the shoots appeared from the 3d to the 10th of April, some as many as four inches in circumference ; they afforded fifty shoots, which formed a bunch weighing more than six and a half pounds. No. 2, growth passable, but a little later than that of No. 1, and with plenty of small shoots ; fifty made a half-bunch, weighing little more than the half of that cut from No. 1. No. 3, vegetation poor, one plant not starting till the 22d of April ; fifty shoots formed only half a bunch, and did not weigh more than two and a half pounds.

To resume, we have seen that the plantation formed with plants a year old has given at its fourth starting, or at the end of three years of plantation, a bunch of asparagus twice as large as that of either of the others. In other terms, the plantation made with plants a year old produced double that of the one where two-year-old plants were used, and nearly treble that made with plants of three years old. The conclusions are easy to form. — *V. F. L., in "The Field."*

THE DIXIE TOMATO.—This variety is more prolific than the Tilden, Keyes's Early, or any other known to me. It is larger than either of them; one pulled yesterday weighing sixteen ounces, and measuring fourteen inches. It is uniformly large, though not as smooth and round as the Tilden. It is a new variety, and will be much sought after for its immense yield. In deep, rich soil, the stalks grow large and strong, bearing their heavy loads well up off the ground. I think the yield per acre must be almost twice as great as any other. It ripened, this summer, the same day as Keyes's Early; both of which ripened a week earlier than the Tilden. — *Dixie Farmer*.

D. W. BEADLE of St. Catharine's, C.W., in a report to the Directors of the Fruit-Growers' Association of Ontario, speaks as follows of the Philadelphia Raspberry: —

"In flavor, it is not quite equal to most of the Antwerp class. The Brinckle's Orange stands at the head of all the raspberries growing in these grounds for richness and delicacy of flavor; and Franconia, Hornet, Imperial, and Naomi all take precedence, in the writer's estimation, of the Philadelphia, in point of flavor: not that there is any thing unpleasant in the latter variety; but it lacks the richness of the others.

"It is much more pulpy and juicy than the Black-cap, — and in this respect is a decided advance on that variety, — yet not quite as juicy as the other varieties above mentioned.

"It is also larger than the Black-cap, — considerably larger, — yet not equal in size to the Franconia, and much short of the great Hornet.

"In productiveness, it far exceeds any of the sorts mentioned in this report, and is in this respect far superior to any variety that has been cultivated here. Indeed, the load of fruit is quite surprising; and, were it not that the canes are more stout than most varieties produce, the burden of fruit would drag upon the ground. In abundance of fruit, it is (as was stated by Mr. Arnold of Paris at the last meeting of the association) among the raspberries what the Wilson is among strawberries, — head and shoulders above its fellows.

"The test of five winters leads the writer to believe that the Philadelphia is *perfectly hardy*, — as hardy as our native Black-cap. It has not killed back at all in some winters, and in others only the extreme tips have suffered. The blossoms are not injured, but come out along the whole length of the cane: hence the very abundant crop it produces every year.

"It also endures perfectly the heat and drought of summer, growing luxuriantly and perfecting its fruit much better than the Franconia. Not that, in such an extreme drought as has prevailed in this vicinity for the past five weeks, it perfects every berry, or shows no lack of moisture, or that in hard or nearly sterile soils it will not flag under such intense heat and continued drought; but in the same row with the Franconia, in the same soil, and receiving the same treatment, it suffers less from heat and drought, and brings to perfection a heavier crop.

"The habit of growth is unusually vigorous, stout, and upright, enabling the plant to sustain its enormous crop; the foliage is deep-colored and heavy; and, thus far, there has no disease, or symptom of disease, appeared."

AN INTERNATIONAL HORTICULTURAL AND FLORICULTURAL EXHIBITION is to be held in Hamburg at the commencement of September, 1869. The subjects of exhibition are to be arranged in three principal classes: the first is to embrace cultivated vegetables, fruits, and flowers; that is to say, all kinds of produce of the kitchen-garden, flower-garden, conservatories, hot-houses, and greenhouses, including shrubs, conifers, and nursery-plants; also cut and dried flowers, and selected baskets of fruits. The second includes garden-buildings and appliances, such as greenhouses, hot-houses, screens, water-carriers, transplanting-machines, syringes, heating-apparatus, cutting-tools, and cutting-machines, contrivances for fumigating; also rustic bridges, summer-houses, rock-work, fountains, &c. The third, for produce not included under the preceding divisions, is to include cereals, seeds, fruits, and produce occupying an undetermined place between gardening and agriculture; embracing forest and vegetable produce of all kinds, and from all countries, as employed for food, medicine, or other purposes. The guaranty-fund has been arranged, and a site secured in the south-western suburb. It is in the form of a park, on very high ground, which commands a picturesque view of the River Elbe and of its shipping, and of the surrounding scenery. Dr. C. H. Merck is chairman of the committee; Senator C. De Chapeaurouge, vice-chairman; Mr. Edward L. Behrens, treasurer; and Dr. Donnenberg, Dr. Götze, and Dr. H. Merck, secretaries. Communications are to be addressed to Dr. Donnenberg and Dr. Götze, advocates, Hohe Bleichen 16, Hamburg.

THE RAVAGES OF INSECTS. — The following remarks by N. C. Meeker, from the proceedings of the American Institute Farmers' Club, "New-York Tribune," Aug. 25, 1868, deserve attention: —

"We may say positively that destructive insects are increasing every year, and that they destroy as great an amount of food as is saved. To meet these scourges will require our best efforts. The science of entomology, by which insects are classified and their nature studied, is becoming of national importance; and we are sure that, without its help, little will be done. The first step in every pursuit is analysis, by which we separate a whole into parts; upon each of which, attention is to be fixed. Here progress commences. One of the first results in this study is to make distinction between insects which are useful and injurious; for, unless this be done, one will be as likely to destroy his friends as his enemies. At present, this study is so far from being popular, that the greater part of educated men, so called, are as ignorant as the unlettered. It is manifest that the elements of this science should be taught in our common schools, if it is to become of much use; for the transmission of learning directly from the learned few to the common people, without the intervention of a teacher, is impossible. In fitting teachers for their duties, a knowledge of this science should be included among their qualifications, as much as of arithmetic or grammar. At present, however, we have no colleges where studies of this practical nature are pursued, except incidentally; but, when the agricultural universities shall be fairly established, we may expect that the need indicated will be fairly supplied."

W. F. RADCLYFFE, in the English "Journal of Horticulture," gives the following account of his experience in 1868 :—

A SELECTION OF ROSES.—As the catalogues of roses are generally long and bewildering, and as the new roses sent out annually are, to a great extent, worthless, it may be of service to persons unacquainted with roses to give a selection of the best, and of such as are good growers, of hardy constitution, and free and constant bloomers. I am now about to speak of roses on the Manetti stock, unless otherwise specified.

Hybrid Perpetuals.—For beginners, Achille Gonod, Alfred Colomb, Anna Alexieff, Antoine Ducher, Baron Adolphe de Rothschild, Baronne Prevost, Caroline de Sansal, Charles Lefebvre, Comte de Nanteuil, Duc de Cazes, Exposition de Brie, John Hopper, Jules Margottin, La Ville de St. Denis, Lord Clyde, Madame Alfred de Rougemont, Baronne de Maynard, Madame C. Crapelet, Madame Clemence Joigneaux, Maréchal Vaillant, Madame Boutin, Marguerite de St. Amand, Maurice Bernardin, Prince Camille de Rohan, Sénateur Vaisse, Souvenir de Dr. Jamain, Triomphe de Paris, Victor Verdier, and William Griffiths.

The preceding are beautiful roses ; and, if beginners cannot cultivate them successfully, the sooner they take to cultivating something else, the better.

For older hands, I add Abel Grand, Alpaïde de Rotalier, Baronne Pelletan de Kinkelin, Black Prince, Charles Rouillard, Charles Verdier, first-rate ; Comtesse de Chabillant, Dr. Andry, Duchesse de Caylus, Duchesse d'Orleans, Empereur de Maroc, Eugène Verdier, François Lacharme, Gloire de Ducher, Gloire de Vitry (on its own roots), a noble rose ; Jean Rosenkrantz, John Keynes, Monsieur de Montigny, a noble rose ; Lady Suffield, La Duchesse de Morny, Leopold Premier, Lord Macaulay, Madame Alice Dureau, a beautiful first-class novelty in the style of *Lælia* ; Madame Rolland (not the same as Madame Roland), Madame Charles Wood, Madame Émile Boyau, Madame Freeman, Madame Julie Daran, Madame Knorr, Madame Victor Verdier, first-rate ; Pierre Notting, first-rate ; Prince de Portia, Sœur des Anges, Souvenir de Comte Cavour, superb, but not full ; Souvenir de la Reine d'Angleterre, and Vicomte Vigier.

I now put down two unsurpassed roses ; but they are delicate, and require genial situations and first-class loam : they are Madame Rivers and Madame Vidot.

I am very averse to recommending roses that I have not fully proved ; but I fancy we shall eventually find some good roses among the following : Paul Verdier, Monsieur Noman, La France, Marie Girodde, Prince Humbert, Reine du Midi, Felix Genero, François Treyve, Marie Baumann, Mdlle. Jeanne Marix, Madame Martine de Besse, and Merveille d'Anjou. I also fancy these three of this year's novelties, — Monplaisir (Tea), and Hybrid Perpetuals Madame and Jacquier Thyra Hammerick.

Bourbon and China Roses.—These are scentless roses ; and I will only put down distinct and essential ones.

Bourbon.—Acidalie, Baronne Gonella, Souvenir de Malmaison ; and, for poles, Sir J. Paxton.

China. — Mrs. Bosanquet.

Perpetual Moss. — Madame E. Ory.

Tea-scented Noisettes, a noble class. — Solferre, south wall; Gloire de Dijon, Céline Forestier, Triomphe de Rennes; Maréchal Niel, a noble rose, requires a south wall. For beginners, Gloire de Dijon is best.

Tea-scented Roses. — For beginners, Sombreuil, Devoniensis, and Rubens. For others, Adam, Homer, Madame Margottin, Madame Willermoz, Souvenir d'Élise, first-rate; Bouton d'Or, first-rate for button-holes; and Souvenir d'un Ami. For glass, Élise Sauvage, Madame Bravy, and Vicomtesse de Cazes.

Tea roses are in their proper place when under glass. No roses are superior to them for this purpose. They may be grown under a south wall. They require but little pruning, good drainage, high cultivation, plenty of water, and great heat.

Hybrid Perpetuals, Tea-scented Noisettes, and Tea-scented roses are the best three families; and they are rapidly and justly superseding all others.

We have had a trying season, and it may help purchasers if I give the names of those roses that have beaten every thing here this year. These are, — Charles Lefebvre, Jules Margottin, Duchesse d'Orleans, Sœur des Anges, Baronne Prevost, Monsieur de Montigny, Marguerite de St. Amand, Madame Knorr, Gloire de Vitry, Isabella Gray; in the open ground, Gloire de Dijon, Céline Forestier, Triomphe de Rennes, Sombreuil, Élise Sauvage, Devoniensis, Rubens, and Souvenir d'Élise, a most beautiful rose. Others have done well. On the whole, I have had a splendid season. It is almost impossible to conceive or describe the magnificence of the first series of flowers.

I advise persons about to commence rose-purchasing to find out what are really good, and accumulate them rather than heaps of roses erroneously termed varieties. The variety consists in the name. Begin with fifty or a hundred each of Charles Lefebvre and Jules Margottin. These are every-day and all-the-season roses. They always open, and never have a defective bloom. The same may be said of Gloire de Dijon, Céline Forestier, and Triomphe de Rennes.

I have discarded some roses here; but I have filled up their places with well-known good kinds rather than with unproved novelties. The best novelties that I have had of late years are Alfred Colomb, Charles Verdier, Antoine Ducher, and Prince de Portia.

THE COMTE LELIEUR PEAR is described in the "Revue Horticole" for March, 1868, as a new variety; the seed having been sown in 1859, and the first fruit produced in 1865.

We received from M. De Wael, Secretary of the Horticultural Society of Antwerp, in the spring of 1842, grafts of a variety under the same name, which fruited in 1848. It has not been much disseminated: but we remember giving scions to the late Aaron D. Williams of Roxbury, and afterwards seeing the fruit in his grounds; and we also propagated it in the nursery.

The similarity, in form, color, season of maturity, and flavor, of this fruit, to the plate and description in the "Revue Horticole," suggests the inquiry, whether these two varieties are identical, or whether that described as new is a reproduction from seed of the older kind.

R. M.

LIQUID MANURE. — It would not be stretching truth too far (and we see pretty often at the present day some toughish straining at it) to say that the laws which control and regulate the application of liquid manures are less understood, simply because they are less studied, than are the other many and wise rules which arrange, direct, and govern the operations in both farming and gardening. Ask any ordinary rule-of-thumb farmer or gardener when and how he would apply liquid manure, and, twenty to one, he would reply, "Oh! put it on at any time when it's ready, and you've nothing else to do: it'll be all right." Ah! but, my unthinking friend, this will not do; it will not be all right; and those off-hand, hit-or-miss, happy-go-lucky conclusions will fail you, simply because they cannot stand the test of quiet, searching inquiry. Now-a-days, the world is full of people who will not be satisfied with such loose, inconstant, baseless reasonings: they insist on having a sound, positive, irrefragable "why" for every one of their persistent "wherefores." "How do you do this?" "Why do you do this?" "When do you do this?" and "What do you do it for?"

Let me in this short paper see what I can do to throw a little light (it may be a very little) on the question of applying liquid manure; and possibly I may satisfy in some slight degree the questionings of many of your correspondents. (I quietly infer, you see, that you have queries of this description.) I will endeavor, at the beginning, to clear the ground, so that we may walk along without stumbling. First, then, what is liquid manure? It is water holding in solution all the chemical constituents and active agents of manure. Being in this state, its action on the crop to which it is applied is immediate; and successful results are attained with great celerity if the liquid has been judiciously applied.

The laws which regulate liquid manure growing must now be considered; and though these laws are elastic in their interpretation, yet they are still infallible and inflexible in their substance. In order, therefore, that the fullest effects may be derived from its application, and that without injury to the plants to which it is applied, it is absolutely indispensable, 1st, that it be *weak*, and *frequently* given; 2d, that it should be clear; and, 3d, that it should only be administered when plants are in full growth; for, if strong, it is apt to produce great injury, because of the facility with which it is absorbed beyond the assimilating power of the plants. If muddy or thick, it carries with it, in suspension, a large quantity of very fine sedimentary matter, which fills up the interstices of the soil, choking it, or, deposited on the roots themselves, very greatly impedes their power of absorption; and, if it is applied when plants are torpid, it either acts as in the case of being over-strong, or it actually corrodes the tissues. It must always be borne in mind, that, liquid manure being an agent ready for immediate use, its main value depends and lies in that peculiar quality: therefore its effect is to produce exuberant growth; and that it will continue to do as long (but no longer, mind) as the temperature and light required for its action are sufficient. These, then, are the true and inviolable laws which regulate this most important gardening operation: if these are well studied, no mistake can be made. The leading truths which we educe from these principles are, that it must be applied *weak* and *often*, and that it must be given according to

the nature of the plant and the object aimed at. Let me explain. The greatest danger in applying liquid manure is on the side of strength: to use liquid manure very weak and very often is simply to imitate Nature; and a safer guide the most obdurate sceptic could not desire. The carbonate of ammonia carried down to plants by rain is said to be, under ordinary circumstances, about one grain of ammonia in a pound of water. This looks so infractesimally small a dose, that many would be disposed to jeer at it. And I do not say that it is the only safe quantity; I have given and constantly do give stronger doses: but as a general, natural law, it has its due weight, and ought to be a guide to us somewhat in our artificial imitation of Nature's laws. Let us now consider for a moment why and for what object liquid manure is given, and the special results which are variously striven for when it is decided upon to administer it.

If, for example, wood and leaves are the aim of the cultivator, then liquid manure may be freely used from the time the buds burst until it is necessary that the ripening process should begin. In the case of flowers, it must be borne in mind, that, the more leaves a plant forms, the fewer blossoms it will throw *that season*. The application of liquid manure is therefore unfavorable to the immediate production of flowers. The true period of applying it with the purpose of perpetuating the growth and heightening the beauty of flowers is most unquestionably when their buds are large enough to show that the elementary system is complete, and therefore beyond the reach of derangement; when the flower-bud is completely formed, and just about to swell more fully. Now, with fruit it is otherwise, as the best period of applying it to enlarge and improve fruit is after the flower has died off and the fruit is beginning to swell. We gain nothing by trying to enlarge the flower of a fruit-tree. The proper time is when the fruit is sufficiently strong, and has a power of suction capable of opposing that of the leaves: from this time, and as long as the fruit is growing, liquid manure may be used freely.

BEURRÉ DU CERCLE PEAR. — This is a new pear of much promise. It is the first season of its bearing fruit in this country, to our knowledge. A little pyramidal tree in the Royal Horticultural Society's garden, Chiswick, has this season produced half a dozen large and beautiful fruit, which have proved of really excellent quality. The fruit is large, obovate, tapering irregularly towards the stalk; surface irregular, bulging out in places; skin smooth, of a beautiful pea-green color, with a slight patch of russet round the stalk; eye small, open, set in a very shallow, angular basin, almost level with the surface; stalk long and slender, inserted a little on one side without depression; flesh greenish-white, delicate, buttery, and melting, very solid, with scarcely any core; flavor rich and pleasant.

This is a pear which we anticipate will take a high rank. In appearance, it is somewhat like a Glout Morçeau, but is distinguished by the very long slender stalk and the deep-green skin. The flesh resembles that of the Marie Louise and Glout Morçeau. Ripe in October. Grafts of this variety were received by the society in 1860 from the Société Impériale et Centrale d'Horticulture du Département de la Seine Inférieure.



THE Editors of "Tilton's Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

W. B. H., Bridgeport, Conn. — Your plant is *Euonymus Japonicus variegatus aureus*, a beautiful evergreen shrub with distinct and constant variegation, but not hardy. It may, however, be wintered in the cellar, and planted out in the summer.

G. W. M., Woodstock, Vt. — Your plant is *Habrothamnus fascicularis*.

DOES it injure hardy bulbs to have the ground freeze? — Generally not; but tulips always give better flowers if the frost is kept out of the ground by covering of straw or litter. Very early-flowering bulbs also bloom earlier and stronger if well covered in winter, and the covering not removed until all danger of severe frost is past.

Is the new Golden-banded Lily (*Lilium auratum*) from Japan hardy? — Precariously so in Massachusetts. We have known it to survive; but the best mode of culture is to cover the bed with a cold frame during the winter.

How can violets be had in bloom in winter without a greenhouse? — There is nothing easier. Cover the bed, which must be in a sheltered, sunny place, with a frame in early autumn; keep out the frost by straw-mats and shutters; give light and sun every day when the thermometer is above freezing in the sun; and you may gather plenty of violets every day from November to May. The single varieties are the best for forcing, and the most fragrant, but do not sell so well in the market. The Czar and Giant are splendid single varieties, dark blue, very fragrant, long stemmed, and with flowers often an inch in diameter.

Is *Andromeda floribunda*, which is so showy in Central Park, New York, hardy in Massachusetts? — Yes: generally so. We have large plants which bloom finely. It is well, however, to throw a few evergreen-boughs over the plants in winter, as the foliage is sometimes injured.

Are there varieties of the Tiger Lily? and, if so, are they desirable? — There are several varieties, which differ in shades of color. We see in an English catalogue just received a new one advertised, said to bear forty flowers on a stalk. The old variety is good enough, and is very effective in the shrubbery.

What are the best two evergreen-trees among the choicer kinds which are perfectly hardy? — Supposing you have all the commoner kinds, we recommend *Picea Nordmanniana* and *Abies orientalis*, — two very beautiful and distinct species.

Is it a good plan to tie up plants in straw during the winter? — We prefer to protect with evergreen-boughs; but, where these cannot be had, tying up with straw is a good mode of protection, and is not unsightly.

Are the new English clematis which have recently made such a sensation hardy? — Probably not in Massachusetts; certainly not without winter protection. They have hardly had a fair trial yet. The best hardy clematis is the large blue *C. azurea grandiflora*.

How early should flower-seeds be sown in cold frames? — The first of April is quite early enough, and any time during the month will do.

Can larkspurs be transplanted? — Not the annual kinds: they should be sown where they are to remain, as soon as the ground is well settled in the spring. Name a few fine plants for effective foliage. — *Cannas*, or Indian Shot, and *Ricinus*, or Castor-oil Bean, in variety, *Colocasia (Caladium) esculenta*, *Aralia papyrifera*, and *Wigandia Caracasana*. All are easily procured, and, except the *Wigandia*, can be kept in a cellar during the winter.

What are the best three hardy rhododendrons for general planting? — *Roseum elegans*, *Album grandiflorum*, and *Everestianum*.

Give the names of ten of the best hardy azaleas. — *Calendulacea crocea*;

C. flammea; *Flameola incarnata*; Adelaide, *aurantiaca cuprea*; *Coburghii gloria triumphans*; Marie Verschaffelt, *prænitans*, *pontica imperialis*; ditto *sulphurea grandiflora*.

ARE narcissus suitable for forcing in the house? — There are no better bulbs for house-culture. They are not particular as to soil, and do well with very little care. Give them sun and water, do not let them freeze, and they are sure to bloom. We have been charmed this winter by the beauty of the Silver Jonquil (*Narcissus tenuifolius*): a prettier or more fragrant bulb for house-culture cannot be found. *Narcissus dubius* is another charming species with deliciously fragrant, pure white flowers.

EUGENE, Dixon, Lee County, Ill. — Any glass will do for the sides of an aquarium: of course, plate-glass is the handsomest, as it is also the most expensive. The thicker the glass, the better, as it is less liable to be broken; but the color should be white and clear. A frame made of wood is not suitable, though it might answer in want of a better: a light iron or slate frame is the best. Any of our native water-plants will flourish.

Apogyneton distachon and *Limnocharis Humboldtii*, the former with fragrant white, and the latter with showy yellow flowers with black centre, are two very neat and pretty water-plants of easiest culture.

A. BEEKMAN, Jersey City. — The present winter has, thus far, been unprecedentedly mild. In the neighborhood of Boston, the mercury has not fallen to zero; and we now (Feb. 13) have a clump of snowdrops fully in bloom in a sheltered sunny situation in the open air.

BOSTON. — Your plant is *Thyrsacanthus rutilans*, than which nothing can be prettier when well grown. It is properly a stove-plant; native of Central America; does well in rich, light soil with good drainage; and is easily increased by cuttings which strike freely in bottom-heat.

H. C. B. writes, "I have five varieties of plum. — Orleans, Jefferson, Prince's Imperial Gage, Duane's Purple, and Coe's Golden Drop. Last spring, I prepared a wash by placing two gallons of coal-tar from the gas-works in a cask containing forty (40) gallons, and filling with water; and with this I sprinkled my plum-trees with a 'hydropult' at short intervals, until the pit became hard. I had a good crop of plums. A black Tartarean cherry-tree, which stood near at hand, was also sprinkled; and I had a fine crop of fruit on it. Will you call attention to this mode of repelling the curculio, and ask those who try it to report?"

SEMPER, Cumberland, Ind. — The drawing and letter are received: but your figure and description combine characteristics of entirely different orders of plants; and we know of no one plant which agrees with both. Send us a flower if possible, and we can easily name the plant.

IDEM. — Horse-shoe, scarlet, or zonale pelargoniums, will bloom freely in winter in a sunny parlor-window. There is, however, a great difference in the floriferous properties of different varieties. We have had great satisfaction from the pretty rosy-pink kind, Helen Lindsay, which is never out of bloom, and is a capital window-plant.

S. E. C., Worcester, Mass. — Pompon chrysanthemums are not raised from seed, but are generally propagated by cuttings. Your best plan is to order the plants, which will cost you about three dollars a dozen, from any florist; grow them well during the summer, and they will be large, blooming plants by October. The following are good varieties: —

Bob, red; Danæ, yellow; Mrs. Turner, white; Mont Blanc, white; Madame de Vatry, lilac; Queen of Beauties, purple; Little Beauty, white and pink; Boule de Neige, white, yellow centre; Bois Duval, bronze; Miss Wynes, rosy lilac; Profusion, blush; Torfrida, golden; Madge Wildfire, golden; James Forsyth, crimson; Indian Prince, cinnamon.

To the Editor of "Tilton's Journal of Horticulture and Floral Companion."

As I have been repeatedly requested to give names to some of the best of the seedling grapes now known by numbers, the following have been affixed to those considered the most promising: —

No. 1, Goethe; No. 3, Massasoit; No. 4, Wilder; No. 9, Lindley; No. 14, Gaertner; No. 15, Agawam; No. 19, Merrimack; No. 28, Requa; No. 41, Essex; No. 43, Barry; No. 44, Herbert.

These, taken from persons eminent either in horticultural or botanical science, together with the "Salem" already named, and a few local Indian names, it is hoped will satisfactorily designate twelve of those which are now thought, after several years' trial, to be the best varieties. *E. S. Rogers.*

SALEM, MASS., March 29, 1869.

CAMBRIAN, Loretto, Penn. — Which would be the most profitable method of cultivating onions, — from sets or seed? — From seed, except for an early crop.

What quantity of seed will be required to sow an acre? — Three pounds.

What is the best soil and mode of cultivation? — A light, mellow, loamy soil. The land should be well spaded, or ploughed deeply, and the surface made smooth. Sow early in drills, with a machine, if convenient, about fifteen inches apart, and cover the seed rather lightly.

What is the best variety? and how much manure to the acre? — The Danvers and the yellow onion are the best. The soil should be made rich: where manure is plenty, twenty cords to an acre will not be too much, though a less quantity will give a good crop.

What varieties of potatoes are best suited to a clayey soil, and the kind and amount of manure? — The Rose will do well. Davis Seedling is a good variety. Our soil being rather light, we cannot from experience say much on this point, but presume that most any variety will flourish with you. Horse-manure is what we use for this crop, six to ten cords to the acre.

D. B. S. has a half-acre of ground of which he wishes to make a fruit, flower, and vegetable garden, and wishes us to give him a plan for planting it. To satisfy fully this desire, we should be under the necessity of writing a small volume; and, as we cannot do this, we will give a few hints which may assist "D. B. S." in avoiding errors which novices are apt to fall into. First of all, the ground should be thoroughly manured and stirred, either by subsoil-ploughing or trenching; and, if not naturally drained, it should be artificially. If this is too expensive, do part at a time; but any other course than a thorough preparation of the soil at the start is poor economy. As to the division of the space, "D. B. S." knows much better than we can whether he prefers most of fruit, flowers, or vegetables, and therefore we leave this to him. Now, in regard to planting: for so small a garden as this, the selection should be confined mainly to trees of secondary growth, and shrubs; admitting only a few trees of the largest size, like the Norway spruce, whose spiry tops rising out of a group of round-headed trees will give spirit and character to it. By all means avoid planting too near the house, so as to exclude the light and air, but dispose the trees so that they shall form a back ground for and give support and shelter to it. Above all, beware of planting large trees, especially evergreens, too near the walks. It is difficult for the beginner who plants a Norway spruce in the shape of a bushy pyramid three feet high, to realize, that, in less time than it takes for a child to grow to a man, this tree will be forty feet high, and spreading twenty feet or more; but it does: and then he wishes it was more than four feet from the walk, for it cannot be pruned up without spoiling its beauty. Neither should the trees or shrubs be crowded too close to each other; for they need air just as much as they do rain and sun. A few well-grown flowering-shrubs, which have had the opportunity to develop on every side, so as to become perfect specimens, will be much more satisfactory than a thicket, where each one must needs starve the others. The same principles will apply to the planting of fruit-trees and vegetables. A full-grown apple-tree will occupy thirty by thirty-feet; and six such would fill a quarter of the half-acre plot. There are, however, some varieties, like the Garden Royal and Golden Russet, which do not attain so large a size, and are therefore more eligible for gardens: and other varieties may be planted on dwarf stocks. But we have already made this of sufficient length, and must therefore refer our correspondent, for the selection of the trees and plants best adapted to fulfil the conditions we have named, to the lists given in "The Journal of Horticulture." If he plants these, and follows the directions given for their cultivation, he need have no fear of failure.

GEORGE W. MARSHALL, Woodstock, Vt. — We would not undertake to pronounce certainly which of your potatoes is the true Early Rose, or whether either is; but, if either, it is the last one you describe. The excitement in regard to new varieties of the potato, and the high prices obtained for them, have stimulated unscrupulous men to put many spurious varieties on the market. We advise all our readers to procure their new varieties of fruits, vegetables, &c., either from some seeds-man whom they know to be trustworthy, or else to send to the originator or his authorized agent.

X. wishes to know how to prepare the ground for Rose Potatoes so as to obtain the largest quantity and best quality of tubers, and whether any dressing after the potatoes are up would be of use. — Potatoes should, if possible, be planted on new land; old, worn-out garden soil is not favorable for the production of potatoes of good quality. We believe in spreading manure broadcast, and then putting a little into the hills to start them: some use guano or super-phosphate of lime for this purpose. Cut the potatoes into single eyes, and put two pieces in a hill. When the crop is hoed for the first time, ashes will be valuable, put about the plants. With such treatment, large crops can be secured.

NEO inquires whether the grafting-wax which he hears of is the same as common sealing-wax. — We fear some of our readers may be disposed to smile at "Neo's" query as absurd; but we hope no beginner will hesitate to make any inquiry on any point, even the A B C of horticulture, on which he desires information. Sealing-wax, though much more expensive, would hardly answer the purpose of grafting-wax. Three parts each of rosin and beeswax, with two of tallow, make an excellent grafting-wax, to be applied with the hands, so as to exclude the air from all the cuts made in grafting. Or one pound of rosin, five ounces of beeswax, and six ounces of linseed-oil, spread on sheets of strong, flexible paper (Manilla paper is best), and cut into strips, we have found to answer perfectly. It should be tied on.

E. H. H., Fitchburg, Mass. — Please give me the names of six of the best varieties of cherries for Massachusetts, reference being had to hardiness and productiveness. — Black Eagle, Black Heart, Downer, Elton, May Duke, Reine Hortense.

R. of Columbus, O., wishes to plant three acres of cabbages on land that last year raised an average crop of corn, — soil dark loam, well drained, but has not been manured for several years, if ever, except with clover, — and inquires how and in what quantity he shall apply lime and old stable-manure, and how deep he shall plough to get the quickest returns.

If your soil abounds in vegetable matter, as it probably does, a dressing of lime would be beneficial; but we should not advise the use of lime in connection with animal manures. The amount per acre should be somewhat proportionate to the natural depth and strength of the soil. Where this is shallow and poor, twenty or thirty bushels might be applied; while, under opposite conditions, twice this amount would be used with safety. It would be better if the lime could be composted with peat or loam, and allowed to stand a few months before using; but, if it must be applied fresh, see that it is well air-slacked; then spread on evenly, and plough in. If its immediate effects are desired, spread on after ploughing, and harrow in; which is the course we think you had better adopt. As regards the proper depth for ploughing, if the pan or subsoil is not disturbed, you cannot plough too deep.

For a crop of cabbages, the ground should be naturally strong, generously dressed, and put in the best condition possible: it can hardly be too rich.

AROOSTOOK. — Most desirable apples and pears for a Northern climate : — Apples, — Red Astrachan, Fameuse, Pomme Grise, Ribston Pippin, Bourassa, Duchess of Oldenburg, Early Harvest, Keswick Codlin, Large Yellow Bough, Northern Spy, Red Canada, Rhode-Island Greening.

Pears, — Bartlett, Beurré d'Anjou, Buffum, Flemish Beauty, Fulton, Louise Bonne de Jersey, Onondaga, Seckel, Tyson, Vicar of Winkfield, Urbaniste. Many of the English, Russian, and other European apples succeed much better in the northern part of Maine and Canada than farther south. Probably some of the English pears, such as Monarch, March Bergamot, and others which are so highly esteemed there, would be found well adapted to Northern climates.

WE take the liberty to publish the following extract from a note received from our friend Dr. I. P. Trimble of Newark, N. J., well known as one of the most valiant and untiring enemies of our insect foes. We hope the doctor will now pound away at the fruit-cultivators until they do just what he tells them to do.

“ I have been pounding away at the fruit-enemies for more than twenty years, telling the people exactly what to do, and that it is useless to do any thing else ; and still, who eats an apricot or nectarine ? Or who, except J. J. Thomas or Ellwanger & Barry, eats a plum ? Do any in Massachusetts ? No : you are all cowards.

“ I have had the Vineland settlement under my charge (as to bugs) for some years : the people there are converts, and this year the great battle is to be fought under my immediate instructions. If they do credit to the commanding officer, the victory will be complete, and the question hereafter no longer an open one.”

A correspondent in San Francisco, Cal., writes under date of Jan. 30, 1869, “ I have just seen a cluster of cherries from Otis V. Sawyer, grown in his garden in the open air this winter, and wholly unprotected. It is very common for our apple-trees to bear four crops of apples between April and the following winter. Mr. Littlefield at Sacramento has an apple-tree that bore six sets of blossoms and fruit in the year 1866 or 1867. The last two crops were smaller than the first in a majority of the fruit ; the last crop was stunted by the frost, and did not mature larger than English walnuts. Four crops of apples are often gathered from the same tree in one season in and about Sacramento Valley. Mr. M. Smith has just informed me that they have two cherry-trees in full leaf, now filled with cherries ; two crops this year.”

D. C. RICHMOND, President of the Erie-County Agricultural Society, Sandusky, O., writes us in regard to the injury of raspberries by bees, as suggested in our February number, that he has been engaged for the last twenty years in the cultivation of the raspberry, having several acres, among which the bees have worked much while in bloom ; but he has never known or suspected any injury from them. He has had for the last five years one acre within a few rods of fifteen or twenty swarms of bees ; and these plants have never failed of a good crop.

A SOUTHERN correspondent inquires whether the sterile (staminate) trees of the persimmon, of which he has too large a proportion, can be made fruitful by grafting them with scions from bearing trees. — We see no reason why they may not, of course leaving a sufficient number of staminate trees to impregnate the others; but, as we have no positive information upon the subject, we should be glad to receive from our readers an account of any experiment which they have made to test this question.

THE following notes on strawberry-culture, from Charles E. Brown, Esq., Yarmouth, N.S., may be interesting to our readers in that region. —

"I have been so often disappointed, that I am growing very incredulous about new varieties of the strawberry. The immense cut of Col. Ellsworth and his *confères* in 'The New-York Tribune,' started me in strawberry-culture: it would be hard to grow a more worthless plant than that same Col. Ellsworth. The Agriculturist was my next heavy disappointment, and I think Durand's Seedling the last. Out of thirty varieties that I had in fruit last season, I reserved only eight, giving the rest away. Wilson's Albany stands at the head of the list with me, followed, at a considerable interval, for productiveness, by Knox's 700. Triomphe de Gand does well with special culture and frequent renewing.

"I grow them in rows, two feet by two and a half; keep the ground clear, cut off runners, remove old leaves after the crop is off, and fork over the ground with a dressing of compost. The plants, with rare intervals, nearly cover the ground. I doubt if you can beat us in Massachusetts."

Do you know any thing of the three-thorned acacia (*Gloditschia triacanthos*), as a timber tree? — We do not know that this tree has ever been planted for timber; but the wood is extremely hard and solid like the yellow locust, and apparently as durable. Though of slower growth than the common locust, we would recommend its trial, as it is free from the borer which has ruined the locust. The seeds should be selected from the thornless variety, and from tall and straight trees. We think the experiment highly promising.

J. H. B., Dyer, Ind. — Can you give me any information concerning the "Mexican Everbearing Strawberry," and whether it would do to cultivate it for profit? — We know nothing of this variety, but should say the berries were too small and the shape not desirable for a market-fruit. If any of our readers know any thing about it, will they please give the information?

C. H., Union Village, writes that he has had excellent success grafting the finer kinds of grapes on wild-vines, late in the season, after the latter have made four or five feet growth.

MAY.



PINUS PONDEROSA AND P. BENTHAMIANA.

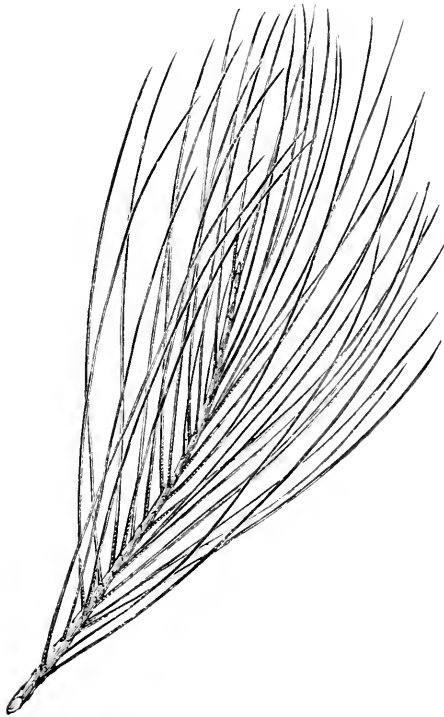
By P. BARRY, Rochester, N.Y.

MR. HOOPES, in his recent treatise, "The Book of Evergreens," seems to regard these two noble California pines as identical; enumerating *Benthamiana* among the synonymes of *ponderosa*. I think this is an error, as both are now well known in collections both in this country and Europe, and appear to be quite distinct.

In 1854, I think, we imported *P. ponderosa* from Europe. One of those now in our grounds is a splendid tree, upwards of thirty feet in height. In 1855, or thereabouts, we procured from Mr. Beardsley, a well-known collector, a quantity of seeds of California trees, among which were both of these pines. Of the *Benthamiana* we raised about a thousand plants. Our largest plant of this is about eight feet in height; but many that we sold must be much larger, as our tree was not planted where it now stands until our whole stock was about disposed of. The leaves of the *Benthamiana* are in threes, same as *ponderosa*, but are somewhat longer, and more slender and flexible, which causes them to droop slightly; whilst those of

the *ponderosa* are always erect. In the leaves of the *Benthamiana*, there is also a slight waviness, which is absent in *ponderosa*. The leaves of *ponderosa* are hard when pressed in the hands; those of *Benthamiana*, smooth and silky. A glance at the two trees, as they stand side by side here, would convince any one that they are not identical.

It is about twenty years since the *Benthamiana* was introduced in Europe.



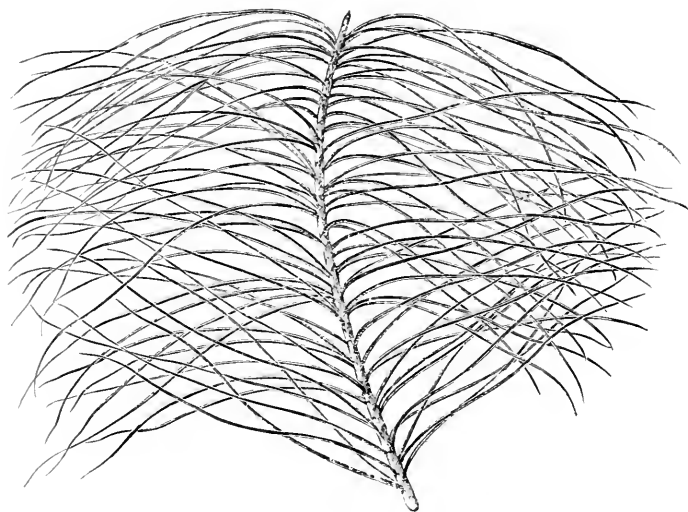
PINUS PONDEROSA (one-fourth natural size).

In 1847, Mr. Hartweg was sent to California by the London Horticultural Society. In July of that year, he sent home seeds of this pine and several others.

In his journal, which was published by the London Society in 1847 and 1848, frequent allusions were made to the *P. Benthamiana*. He says in one place, "Some trees of this noble pine attain an enormous size: the largest I measured was twenty-eight feet in circumference, and two hundred and twenty feet high."

In the year 1849, Mr. Gordon (author of the "Pinetum"), who then had charge of the London Horticultural Society's garden, described the *Benthamiana* in the journal of that society, and gave a drawing of the cone and leaves. Again we find it enumerated in "A Catalogue of Coniferous Plants, with their Synonymes," prepared by Mr. Gordon and Dr. Lindley, and published in the journal of the London Horticultural Society in 1850.

In that list, the synonymes given to *P. Benthamiana* are *P. brachyptera* (Engleman) and *P. Sinclairii* (Hooker).



PINUS BENTHAMIANA (one-fourth natural size).

In Carrière's "Traité général des Conifères," published in 1855, and in Gordon's "Pinetum," published in 1858, it is described fully, and no doubt expressed as to its distinctness.

It is to be found in all the principal collections of conifers in Europe, and enumerated distinctly in the leading nursery-men's catalogues.

I remember having seen, not long ago, a notice of one at Dropmore, England, twenty-seven feet eight inches in height, and two feet four inches girth. There must be others larger than this.

I presume that Mr. Sargent must have fine specimens of both these pines in his grounds at Fishkill, on the Hudson. We sent him plants in 1857. I send you a small branch of each to show the differences of character to which I have alluded.

FOREIGN VARIETIES OF THE POTATO.

It is somewhat remarkable, that, of the great number of foreign varieties of the potato which from time to time have been introduced into this country, so few have proved worthy of cultivation. That they are productive, healthy, and of good quality, at home, there can be no question; but that they are unproductive, extremely liable to disease, and often unfit for the table, when grown in this country, a long experience has proved to be equally true.

In a trial-growth made last season of many of the more recently-introduced foreign sorts, in connection with some of the most approved American varieties, the difference in yield in favor of those of American origin was most remarkable; and we ought also to add, that a like difference in favor of the latter was quite as observable when put upon our table. We do not deny that a valuable variety may yet be received from abroad; but, judging from the past, it is plainly evident, that *potatoes of American origin are best suited to American soil*. Passing through the markets of any of our large cities, the varieties offered for sale will be found almost exclusively those which originated in this country; and this we must consider a decided test of their superiority.

Looking over the numerous list of foreign potatoes we have had on trial, embracing many of the most esteemed and highly recommended, not one can be found that would fill the place of the Mercer, Jackson White, Early Goodrich, White Peachblow, Early Rose, or any one of the kinds now approved and generally cultivated in the United States.

For the vegetable garden, we are satisfied that selections from American potatoes will prove the earliest, most productive, and the best; and that, in every desirable quality, they will prove greatly superior to any of the introduced varieties for cultivation for market.

Fearing Burr.

ROGERS'S HYBRID GRAPES.

By E. S. ROGERS, Salem, Mass.

THE following are descriptions of the twelve grapes which have been selected as most worthy of names :—

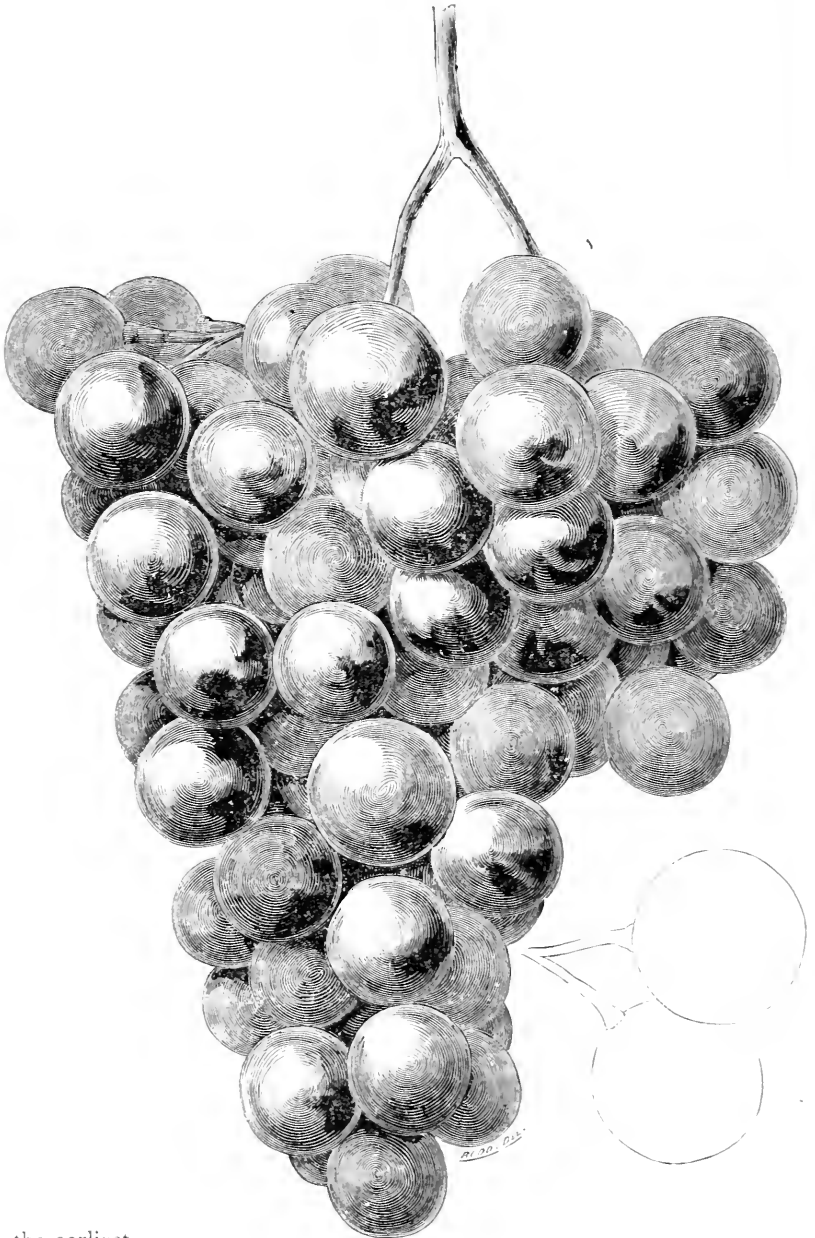
Gothe, No. 1. — Though this variety is perhaps more unique, and shows more of the character of the European species, than any of the other sorts, the vine is one of the hardiest, and very free from mildew. It produces large crops of beautiful clusters and berries, free from rot or imperfection of any kind. The bunch is large, shouldered ; berry large, in shape long, oval, resembling the Malaga ; of a yellowish-green towards the sun ; skin thin ; flesh tender and melting throughout, very sweet and delicious, with a pleasant and peculiar aroma. This variety is so late as seldom to ripen here, but, as far south as Washington and St. Louis, is considered one of the most valuable.

Massasoit, No. 3. — Bunch of medium size, rather short, with shoulder ; berry of medium size ; color red ; flesh tender and sweet, with a slight trace of the native flavor when fully ripe, though not so much as to be at all objectionable, but, on the contrary, rather pleasant. As it is very early, this is one of the most valuable for cultivation at the North.

Wilder, No. 4. — Bunch large and showy, so much resembling Black Hamburg as to be hardly distinguishable in appearance ; berry globular, large ; color black ; flesh tender, with a slight pulp. The fruit ripens as early as, and frequently earlier than, the Concord, and can be kept a long time. It has become the most popular of all, and is one of the most profitable for market-purposes, its size and beauty being equalled by its vigor, hardiness, and productiveness.

Lindley, No. 9. — This, together with all those numbered from 5 to 14 inclusive, was hybridized from the Chasselas ; while the remaining numbers were fertilized with Black Hamburg. Vine of very vigorous growth, making rather long-jointed wood, but sometimes very fruitful. The foliage when young is of a reddish color. The bunch is long, compact ; berries globular, reddish ; flavor sweet. It resembles the Grizzly Frontignac in appearance

of bunch and flavor, and has scarcely a trace of pulp. It ripens among



the earliest.

Gaertner, No. 14. — Bunch above medium size ; berry from medium to large ; skin thin ; color light red, with a pleasant aromatic flavor. The vine is productive, and the fruit ripens early.

Agawam, No. 15. — This variety has been here considered the highest flavored of the series. Bunch large, somewhat loose, shouldered ; berry large, globular ; skin thick, of a brownish-red color, like the Catawba ; flesh tender and juicy, free from tough pulp ; flavor very rich and pleasant, having a peculiar aroma, thought by some to resemble the Black Hamburg. The vine is the most vigorous of all, and very productive ; but, in unfavorable seasons and soils, the fruit is somewhat inclined to rot. The illustration is from a bunch grown in the garden of Mr. W. H. Harrington of Salem, in 1863, and is slightly reduced in size to accommodate it to the page, having measured four and a half by six inches. This vine, in 1863, covered a trellis seventy-five feet long by eight or ten feet high, and bore about seven hundred bunches ; being then five or six years old.

Merrimack, No. 19. — The bunch is generally not as large as the majority of the black varieties ; berry large, globular ; skin black ; flavor sweet and rich. Ripens early, and is of uniform good quality even in unfavorable seasons ; vine very vigorous and a good bearer. This may be classed among our best early grapes.

Requa, No. 28. — Bunch large, shouldered ; berry of medium size, roundish ; skin thinner than most of the collection ; color red ; flesh tender and sweet, having in some seasons a trace of the native flavor.

Essex, No. 41. — Bunch of medium size, shouldered ; berry somewhat flattened, in this respect resembling the native parent ; flesh tender and sweet, with a high aromatic flavor, excelling on this point most of the black varieties. Ripens early.

Barry, No. 43. — Bunch rather short, broad, and compact ; berries roundish to oval, much like Black Hamburg in general appearance ; flesh delicate, sweet, and tender ; skin thin ; color black. Ripens as early as Concord, and is one of the best black grapes. Vine very vigorous and productive.

Herbert, No. 44. — Bunch rather long and loose ; berry of medium size, round, or sometimes oblate ; flesh tender, sweet, and rich. Early and productive.

Salem, No. 53. — This was originally numbered 22 in my private collection ; but, a spurious sort having been put into the market under that number, the number of this variety was changed to 53. The bunch is rather large and broad ; berry inclining to oval in form ; skin thin ; color black ; flesh tender, sweet, and delicate. The flavor is, to my taste, superior to any of the others. In general appearance, the bunch strongly resembles the Black Hamburg ; but it is as early as Concord. The vine is vigorous and productive ; and, on the whole, it is one of the best black grapes.

FORTY-DAYS CORN.

OUR attention has recently been called to a variety of table-corn represented as attaining a size fit for plucking in forty days. We are aware, that, if the planting should be delayed till settled summer weather, germination and growth would be greatly hastened ; but, even under such conditions, it will be difficult to find a “forty-days corn.” If the seed is planted in spring as soon as the soil is in proper condition to receive it, from sixty to seventy days will be required for the production of ears suitable for the table, and this for our earliest sorts ; while for the larger, which are generally the later kinds, nearly ninety days will be needed for full perfection.

All the sorts remarkable for extreme earliness that have come under our observation have been those with quite small ears ; and we are satisfied, that, in proportion as the time for growth and development is shortened, there will generally be found a corresponding decline not only in the size of the ears, but also in the height and general strength and vigor of the plants. A “forty-days corn,” if such a sort shall ever be produced, will be quite dwarfish in habit, the ears will be put forth near the ground, or low on the stalk, and will, withal, be so short and small as to be scarcely worth the growing. For those who may be induced to rely on the promise of ears fit for their table in six weeks, there can scarcely be any thing in reserve but *little* corn, and much disappointment. We pronounce a “forty-days table-corn” a myth.

F. Burr.

NEW TREES AND SHRUBS.

By J. L. RUSSELL, Professor of Botany to the Massachusetts Horticultural Society.

THE following descriptions of some ornamental trees and shrubs of Northern California and Oregon are from "Reports of Explorations of the Pacific Railroad," vol. vi., 1857:—

The California Buckeye, *Æsculus Californica* (Nutt). — A shrub, or low-spreading tree, with large rose-colored flowers in a dense thyrse; fruit large, spheroidal, slightly tuberculated. Though usually a wide-spreading shrub, yet it sometimes assumes the style of a tree of twenty feet in height, and would become a valuable acquisition to cultivators of ornamental shrubs if introduced into our Eastern collections.

The Vine Maple, *Acer circinnatum* (Pursh). — A small shrub-like tree, with slender trunks springing from the same root, which assume a sarmentous character, arching and bending towards the earth, and rooting at the ends. Its foliage resembles that of the sugar-maple: its wood is hard and fine-grained, and, from its dwarf size and habit, might be used to advantage in ornamentation.

The Large-leaved Maple, *Acer macrophyllum* (Pursh). — A small tree, with immense pale-green leaves, and long racemes of flowers. Conspicuous through portions of Oregon, and very ornamental.

The Manzanita, *Arctostaphylos glauca* (Lindley). — A large evergreen shrub, with red bark, which peels off as it grows old; ovoid, smooth, leathery, entire leaves set vertically; flowers in terminal racemes, pinkish white, urceolate in shape; fruit a flattened, black, smooth, spheroidal berry, with rough, triangular seeds. Its wood is hard, of a reddish color, and resembles that of the apple-tree; its branches much twisted and crooked, and useful in making rustic work. It is one of the characteristic shrubs of the Californian flora, abundant on the hills and mountains. From the fancied resemblance of its berry to a little apple, it has received the Spanish name of Manzanita. Growing eight or ten feet high, with many stems or trunks covered with red bark, and with its vertical evergreen leaves, it is worth cultivating as an ornamental plant.

The Madroña, *Arbutus Menziesii* (Pursh). — A small tree, twenty-five

to thirty feet high, with green or reddish exfoliating bark ; oval, petiolate, nearly entire leaves, very smooth above and glaucous beneath ; urceolate flowers in elongated and clustered pubescent racemes ; and rough, red, many-seeded berries. Seen plentifully in Oregon and California, ranging north of the Columbia River, where it is known as the laurel. Its rich foliage of large, thick, and shining leaves, its tinted bark, and its large cherry-like berries, render it a handsome tree, and well worthy of eastern cultivation.

The Californian Laurel, *Orcodaphne Californica* (Nees). — The handsomest hard-wooded tree to be found in California, with dark-green, lustrous, persistent foliage, resembling the European laurel, and quite as ornamental.

The dwarfer forms of maples, the Oregon ash, the Oregon alder, the various oaks, and the multitude of the nobler forms and species of the pines, and their allies, afford a rich opportunity of experiment in making them familiar to our arboretums and tree-plantations.

WOOD-ASHES FOR PEAS.

WOOD-ASHES will be found an excellent surface-dressing for growing peas. They impart health and vigor to the plants, and prevent the decaying of the leaves, and the premature withering and drying up of the stalks near the ground. If applied in excess, however, little benefit will be derived. One quart for twelve or fifteen feet of row, repeated after an interval of two or three weeks, will be ample. Apply, if possible, just before rain ; spread them on each side along the row, two or three inches from the stems of the plants, and hoe in immediately.

The practice of applying dry ashes in the drill at the time of sowing is not recommended. We think, however, they might be used in this manner if they were thoroughly incorporated with the soil, and allowed to remain a few days before the seeds were put in. Two quarts may be allowed for each rod of drill.

F. B.

REMARKS ON THE PINK FAMILY (*Dianthus*).

PART II.

By JOSEPH BRECK, Ex-President of the Massachusetts Horticultural Society.

CLOVE PINK (*Dianthus caryophyllus*). — This is the original carnation, from which the florists' varieties have been obtained, and is more hardy and robust in its character than those which have sprung from it. Still, in our climate, it is necessary to protect the plants by a light covering of leaves or evergreen-boughs in the winter. The old plants do not flower so well as those raised from layers or cuttings. There is a difference in the fragrance of the varieties of this section of pinks. Some of them have a very strong, agreeable, spicy fragrance; and all more or less so. The flowers are generally plain, or of one color, with fringed or serrated petals; some of them very full and double, but not so perfect in form as the improved varieties. All the varieties of carnations, except the perpetual sorts, flower but once in the season, which is in July and August.

PERPETUAL CARNATION PINK, WINTER-FLOWERING, MONTHLY, REMONTANT, TREE CARNATION, &c. (*Dianthus fruticosus*). — This variety of *Dianthus caryophyllus* is now generally cultivated by florists for bouquets or single flowers, for which there is a great demand from the lovers of flowers. The monthly carnation combines the richest and most varied coloring with exquisite fragrance, but does not have the perfect form or the regular stripes and markings of the florist's carnation; but has a great advantage over it, because it gives a succession of flowers through the winter in the greenhouse or sitting-room, and, when turned out of the pots in the summer, continues flowering more sparsely through the season. It is best, however, to nip off the buds as they appear in the summer, if strong-flowering plants are wanted for the winter. By retaining the terminal or upper growth, the flowering period may be prolonged beyond the winter. In the spring or early summer months, the plants should be placed in a cool, airy greenhouse, or cool east or south pit throughout the summer, to mature the requisite vigor of growth for bloom. During the warm summer months, the plants should not be placed in any position where a free ventilation of air cannot be afforded by day or night; and, when the requi-

site growth is obtained, they may be exposed in the open air until autumn, with the usual attention given to plants in pots." I have succeeded very well with my plants by turning them out in a bed, with a prepared soil, in a somewhat sheltered spot, to remain until October, when they are carefully taken up with a ball of earth attached to the roots, and potted, and placed in the greenhouse, and shaded a few days. I have seen plants of the monthly carnation grown in a neighbor's sitting-room, which produced abundance of flowers year after year, with very little care, except that of repotting in autumn, in pots of a larger size ; taking off the decayed fibres on the outside of the ball ; giving fresh loam about the stem after taking off as much of the surface-soil as is possible without disturbing roots.

DIANTHUS HORTENSIS, GARDEN PINK, OR PHEASANT-EYED PINK, so called on account of the dark eye that gives so much beauty and distinctness to the choice varieties. This species is desirable on account of its being the most hardy of the family, standing the winter without any or with very little protection. The coarser varieties are easily propagated by dividing the roots. A very common double variety is to be seen in most of the ordinary gardens ; often used for a border to walks and flower-beds. The flowers are of a light-rose or flesh color, with a dark and not very distinct centre, with deeply serrated petals, and bursting calyx, but of exquisite fragrance, for which all the varieties are noted. This old denizen of the flower-garden carries me back seventy years, when I had made for me what was then called a "pink-posy." A dozen or twenty pinks were strung together by running a needle and thread through the calyx, then rolled up and tied, with a sprig of hyssop, southern-wood, or some other fragrant herb in the centre, which made quite a desirable, sweet-smelling bouquet. In those primitive days, it was the custom for little boys and girls to carry flowers to church, and it was considered no sin. These "pink-posies" were made up on Saturday afternoon, before the sun went down, by the strict, Sabbath-keeping people. It was not uncommon to see tulips, pæonies, lilacs, and roses, with other garden and native flowers, in the hands of ladies, old and young, as well as in the hands of the young men : so that the church presented quite a flowery appearance in the season of flowers. Perhaps they were as appropriate as some of the more costly ornaments which are too frequently seen in such profusion and display upon the

dresses of the “*worshippers*” at the present time. But let us leave this subject to be decided by the consciences of the gayly dressed, and resume the subject of pinks. “The pink,” Loudon says, “as a florists’ flower, is of much less antiquity than the carnation: it is scarcely mentioned by Gerarde; and Parkinson has given very few varieties. It was chiefly grown as a border-flower till within the last” eighty years, “since which time it has been greatly improved, and many fine varieties originated. Being one of the hardest and least expensive of fine flowers, it is much cultivated by operative mechanics and manufacturers round large towns, and nowhere to such an extent as about Paisley, by the muslin-weavers there. The Paisley growers reckon above three hundred varieties of the pheasant’s-eyes.” “The propagation and cultivation of the pink are the same as that of the carnation, excepting that it is less frequently kept in pots or frames, but planted in beds of fresh loamy soil, and the small side-shoots reduced in the autumn in order to throw more strength into those intended to produce flowers the following season. Some cover their pink-beds with an awning. Not more than eight or ten flowers are ever allowed to expand on one plant; and these, if they have a tendency to bursting at the calyx, are to be tied as in carnation culture.”

All the varieties of the pheasant-eyed pink flower the last of June in this climate. The improved varieties are known among us as “Paisley Pinks.” MacMahon gives “*a description of the properties of a fine double pink*” as follows: “The stem should be strong and erect, and not less than twelve inches high; the calyx rather smaller and shorter, but nearly similar in form and proportion to that of a carnation, as well as the formation of the flower, which should not be less than two inches and a half in diameter.

“The petals should be numerous, large, broad, and substantial, and have very finely fringed or serrated edges, free from large, coarse, deep notches or indentures: in short, they approach nearest to perfection when the fringe on the edge is so fine as to be scarcely discernible; but it would be a very desirable object to obtain them perfectly rose-leaved, that is, without any fringe at all.

“The broadest part of the lamina, or broad end of the petals, should be perfectly white and distinct from the eye, unless it be ornamented by a continuation of the color of the eye round it, bold, clean, and distinct;

leaving a considerable portion of the white in the centre perfectly free from any tinge or spot.

“The eye should consist of a bright or dark rich crimson or purple, resembling velvet; but the nearer it approaches to black, the more it is esteemed: its proportion should be about equal to the white, that it may neither appear too large nor too small.”

When the corolla consists of petals distinctly edged with the color of the eye, it is denominated a laced pink, and is considered the most perfect and beautiful.

DOUBLE CHINA AND DOUBLE IMPERIAL PINK (*Dianthus Chinensis* and *D. imperialis*). — The latter is not a distinct species, but an improvement on the former. The flowers are larger, more regular and perfect; and this appears to be the only difference. They are biennial, but flower profusely from seed the first year. By giving them a slight protection, they flower stronger the second year, after which they perish. If the soil is very wet and cold, it is better to take up the choice varieties, and place them in cold frames, or in a common dry cellar. If they were but fragrant, they would be more highly esteemed than they are now. For beauty, they will vie with any flower of the garden. They continue in bloom from July to October. By sowing the seed of the double varieties, a great proportion of the plants will bear double flowers, some of them of exquisite beauty. In a large bed, hardly two plants will produce flowers alike: among them may be seen flowers pure white, every shade of scarlet, crimson, purple, pink, and rose; shaded, striped, spotted, and beautifully marked with darker shades. A bed of these pinks presents a very gay appearance. The height of the flower-stems hardly exceeds a foot.

MULE PINK (*Dianthus hybridus*). — Of these mules there are a great variety, which have been produced by crossing the China and Imperial with *D. latifolius*, *D. barbatus*, and *D. atropurpureus*, of which there are many sorts enumerated in the catalogues. Some of them are dwarf, with pure white, striped, purple, and various-colored flowers; but, unless there are extensive grounds to be ornamented, there are but few people who would be inclined to cultivate them all.

BROAD-LEAVED DARK-PURPLE PINK (*Dianthus latifolius atrosanguinea hybrida*). — This is supposed to be a hybrid between the Sweet William

(*D. barbatus*) and *Dianthus Chinensis*. The leaves are broad, like the Sweet William; the flowers are produced in clustered heads, of a rich dark purple-crimson, and very double. It is an imperfect perennial, like the parents, and comes pretty true from seed. The finer sorts may be perpetuated from cuttings or layers.

JAPAN PINK (*Dianthus Chinensis Heddeiwigi gigantea*, and *D. Chinensis Heddeiwigi laciniatus*) with numerous hybrids. — One with rose-leaved petals, the other variety with deeply jagged or deeply lacinated petals. These, like the China and Imperial Pinks, are biennials, but flower finely the first season. They will also stand the winter, with a protection of leaves, and flower strongly the second year. The only drawback upon these gorgeous flowers is their lack of fragrance. The flowers are large, sometimes three inches in diameter, borne upon stems from a foot to a foot and a half high. The foliage is somewhat glaucous, and lanceolate. The colors are very brilliant, and consist of pure white, white striped, every shade of rose, lilac, carmine, crimson, purple, violet, and variously spotted, variegated, and mottled. The double flowers are very dense and full.

This splendid *Dianthus* was introduced into St. Petersburg, Russia, from Japan by Mr. Heddewig in 1858. It has now become quite common, and may be considered as one of the most important additions to the flower-garden which has been made for many years.

THE DOUBLE DIADEM PINK (*Dianthus Chinensis Heddeiwigi gigantea diadematus fl. pl.*). — This novelty may be justly called a striking one (even setting aside the long name). The Prussian florist who produced it from seed gives the following description of it in his catalogue: "It differs from *Dianthus Heddeiwigi* by its more luxuriant, compact, and dwarf growth; by its leaves; but, above all, by its flowers, which have a diameter of two or three inches. They are regular in form, very double, and pass into all tints, from lilac, crimson, and purple, to the deepest black-purple; having a velvet-like radiant splendor impossible to be produced by the brush of the artist. Each petal is a marvel of beauty in its form and coloring. The principal and immutable character of them are two mirrors, with more or less distinct outlines, with bright border or inverse. These mirrors are surrounded by a colored zone; but the toothed border of the petals is either pure white or slightly colored. The colors are so fine, that it is difficult to de-

scribe them ; and, to give some idea of their beauty, they have been named the 'Diadem Pink.'” Well, I think this is rather a highly-wrought description ; but, if the colored plates which were sent with the seed give a true representation of the flowers, they must be truly magnificent. I have



already (March 16) about fifty plants in a good state of forwardness, and hope I shall not be disappointed when they come into flower : if I should be, it will not be the first time in my life ; for many of the novelties fall far short of what they are trumped up to be. All the pinks of the China and

Japan varieties require a generous, rich soil, neither very heavy nor too light. They are all worthy of a place in every garden, however small.

SWEET WILLIAM (*Dianthus barbatus*). — This is an old inhabitant of the flower-garden, having been known from the time of Gerarde. The varieties are numerous, but have never been treated by florists as a leading flower. It is, however, in its almost endless sports, a very desirable class of flowers for the garden. It is an imperfect perennial, and soon dies out unless it is often divided ; but, with a little care in this respect, the choice varieties may be perpetuated. The proper time for dividing the roots is when the flowers begin to fade in July. They should be planted out in beds of rich soil, which will make strong plants for flowering the next year, especially if a few leaves or evergreen-boughs are thrown over them before winter sets in. The seed should be saved from improved varieties, and sowed the last of May, and, when of suitable size, should be planted out in beds or in the border where they are to remain. The flowers are of every tint of white, rose, light and dark red and purple. Many of the varieties are exceedingly beautiful, such as Auricula-eyed, Dunett's, Hunt's Perfection, and many others. The flowers are produced in flat corymbs or heads, which sometimes contain various-colored flowers. There are also numerous varieties with double flowers, which I do not think are any improvement. Others think differently.

SUPERB PINK (*Dianthus superbus*). — This is a perennial species, with deeply cut or serrated petals ; of exquisite fragrance, but not very conspicuous for show.

Besides these various species and varieties of pinks I have described, there are many others not so interesting, and not of much consequence, except for rock-work ; mostly dwarfs from six to eight inches high : some of them are, *Dianthus alpinus*, *D. arenarius*, *D. plumaris*, *D. aspera*, *D. diminiutus*, *D. prolifer*, *D. glaucus*, *D. collinus*, *D. deltoides*, and many others.

VAN MONS'S THEORY.

By ROBERT MANNING, Salem, Mass.

ALL of our standard pomological authors, in considering the subject of producing new varieties of fruit, invariably begin by reference to the theory and practice of Van Mons.

Van Mons was born at Brussels in 1765, and, at the age of fifteen, sowed in his father's garden the seeds of perennial flowers, roses, and other shrubs, with the design of observing the development, the successive generations, and the variations which might thus be produced. To these he soon added seeds and stones of the well-known fruits, and remarked, that, of all his young plants, the pears were those which least resembled their parents. He searched the gardens, nurseries, markets, and neighboring provinces, to confirm or rectify his first ideas on the causes of the variation of fruits and flowers. When Mr. Van Mons had arrived at the age of twenty-two, the pivot of his theory was fixed; and this was the *degeneracy of the seeds of fruit-trees in a state of variation*. This degeneracy he regarded as a consequence of the age of the variety which bore it.

Having arrived at this conviction, Mr. Van Mons said, by sowing the first seeds of a new variety of fruit-tree, there should be obtained trees always variable in their seeds, because they can no longer escape from this condition; and which are less disposed to return towards a wild state than those produced from seeds of an ancient variety. And as those which tend towards a wild state have a less chance of becoming perfect, according to our tastes, than those which are in the open field of variation, it is in the seminary of the first seeds of the newest varieties of fruit-trees that we should expect to find more perfect fruit, according to our tastes. The whole theory of Van Mons, as stated by Mr. Poiteau in his memoir on the subject, is contained in the above paragraph.

But the question which concerns us is, What is the value to-day, with the light which the experience of Van Mons and others has thrown upon it, of this theory as a guide to the production of improved varieties of fruit? Here the first point that strikes us is the long time required for a fruit to pass through successive generations, which Van Mons estimated, in the

case of the pear, at from forty to fifty years for five generations in the average of his experiments ; though with other fruits, especially stone-fruits, an excellent quality was obtained in much less time.

Another point, which it is believed has been heretofore almost entirely overlooked, is, that Van Mons was not consistent with his own theory ; for instead of sowing the seeds of new wild varieties, as is generally supposed, Mr. Poiteau expressly states, that, at first, Mr. Van Mons was unable to procure the seeds of varieties very recently procreated : the seeds which he was obliged to use to commence his experiments with were obtained from ancient varieties. Of the truth of this statement, we have evidence in the Queen of the Low Countries Pear, which Van Mons extolled as "very large, very beautiful and good, and, without question, the most perfect of pears," but which is only a reproduction of the Spanish Bon Chretien, described by Quintinye nearly two hundred years ago. The experiments of Mr. Dana, Dr. Shurtleff, and others, have shown the incorrectness of Van Mons's principle, that seedlings from a tree in a state of variation always degenerate. In adopting this principle, Van Mons appears to have been guided by the experience of Duhamel and Poiteau, who planted the seeds of the best table-fruits without producing a single one worthy of cultivation.

A difficulty which meets us in the attempt to judge of the results of Van Mons's method, is, that, of the many good pears sent out by him, we have no means of knowing which ones were raised by him, and which were acquired from other sources ; for Van Mons, like all lovers of fruit, was a collector as well as an originator. Besides this, from the multiplicity of his other cares, the thrice-repeated removal and breaking-up of his nurseries, and the carelessness of gardeners, much confusion existed among his trees, and, along with the many varieties of high excellence for which we are indebted to him, a still greater number of inferior or worthless kinds have been received ; and, after having given much consideration to the subject, I do not know of a single pear of which I can say with certainty that it is the legitimate result of Van Mons's method, and could have been produced in no other way.

I would not be understood to disparage or depreciate the obligations we are under to Dr. Van Mons. I do not forget that the Beurré d'Anjou, to

which, as fairly as to any other pear, may be applied the praise which he lavished on the Queen of the Low Countries, a far inferior variety, is not improbably a seedling of his; nor that the Urbaniste was gained by one of his friends and disciples. Nor would I overlook the faith and zeal with which he persevered in an experiment occupying a period of time that would have appalled an ordinary man, and encountered difficulties and obstacles that might well have discouraged him. Still more do we owe him for the effect which his attempt — the first ever made to produce new varieties upon scientific principles — has had in stimulating inquiry into those principles, and causing the production by others of many of our most valuable fruits.

BOSTON-MARKET CELERY.

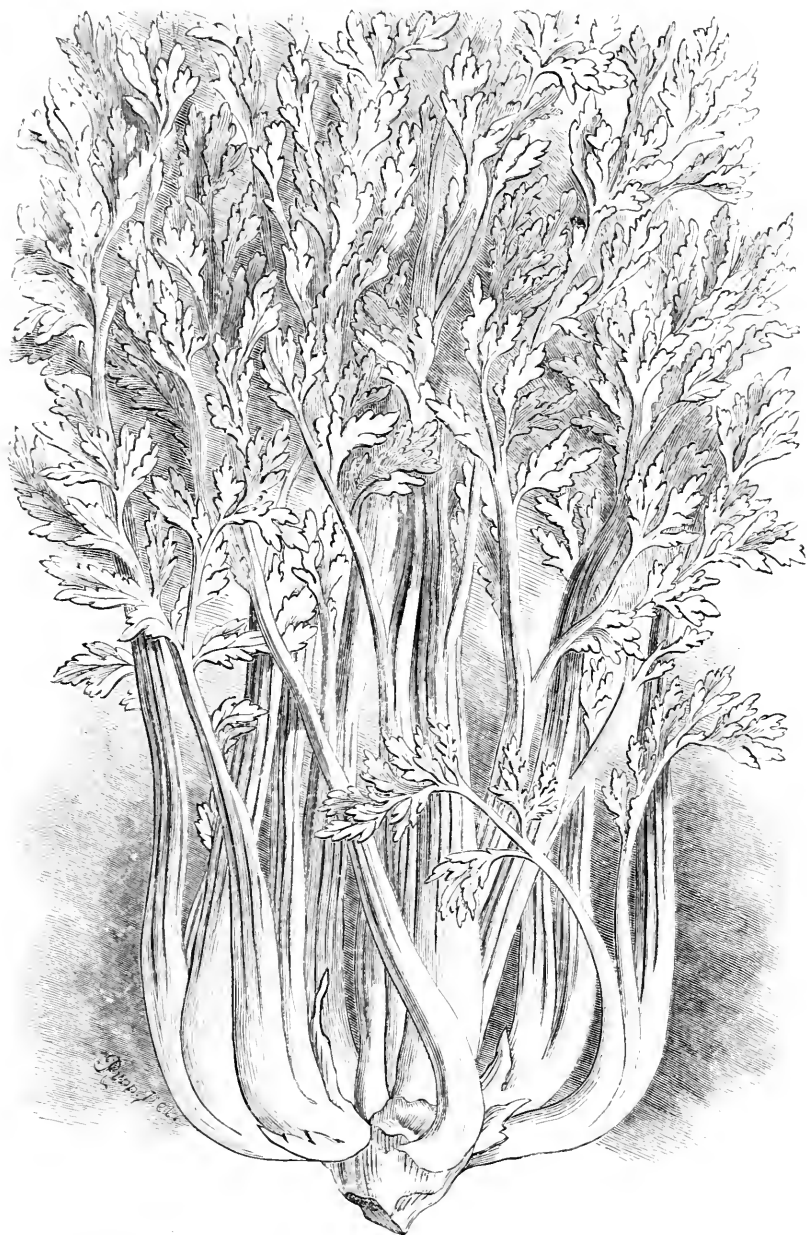
By C. N. BRACKETT, Chairman Vegetable Committee of Mass. Hort. Soc.

THIS is considered one of the finest varieties of this highly-esteemed vegetable grown, and is the established favorite with the celery-growers in this vicinity, where large quantities are grown for the supply of the Boston market.

The specimen from which our illustration was drawn was grown by Mr. Andrew F. Allen of Arlington, Mass., taken from his celery-pit Jan. 16; and, for this season of the year, a finer specimen is rarely seen; each separate stalk perfectly blanched, with the leaves at the extremities as fresh and green as from a plant taken from the ground in September.

This variety is of medium size, remarkably hardy, with the offsets or side-shoots more numerous than in most varieties; blanches very easily and quickly, and, when well grown and properly blanched, is of a pure white color, crisp, brittle, solid, and entirely free from the least sponginess or hollowness; of a mild, pleasant flavor, unsurpassed in this particular by any other variety.

It is recommended as one of the best sorts in cultivation, either for the



kitchen-garden, for family use, or for more extensive culture for the market.

DRAINING FLOWER-POTS.

By A. VEITCH, New Haven, Conn.

COVERING the holes in the bottom of flower-pots with crocks, charcoal, or other material, has been long in use amongst gardeners ; and the advantages resulting therefrom have been believed to be so evident, that the practice is not likely to be abandoned for some time to come. No doubt, intelligent and reasonable men would listen with deference to any one who might claim to have discovered a more excellent way, or who might even insist that the practice, in some instances, might be discontinued ; but we claim that reasons clear and strong must first be given, before the belief becomes general, that "*the system is utterly wrong in theory, and perfectly useless in practice.*" Let us see, if we can, what amount of truth there is in the statement that it is wrong in theory to place any drainage material whatever over the holes of pots in which plants are grown. Is it because such drainage is unnecessary that it is wrong so to do ?

Admitting the want of necessity, we have only a practice which might be dispensed with ; but the wrong will not appear until it can be shown that injury results to plants by being so treated. Now, we can ascertain whether this will be the case or not, by treating some plants with drainage, others without, and by managing them in all other respects the same.

If the advantages as regards the ends for which they were grown proved not to be on the side of the undrained pots, it would appear their neighbors had not been wronged by the extra labor bestowed on them. If no difference could be observed on either side, the ends gained by the two systems would equally balance each other. But if, on either side, there was a difference as regards healthy and luxuriant growth, or in the number and quality of the flowers, on that side should be the preference. The practice spoken against is based upon the universally-acknowledged fact, that stagnant water at the roots of plants is hurtful to their growth and general well-being, and therefore should, by all possible means, be prevented from lodging there. The belief has been, that, by efficiently draining pots, greater facilities are afforded the surplus water to escape than when no such means are employed : indeed, so evident does this appear, that discussion seems

unnecessary. We only need to be cognizant of the effects resulting from the want of drainage, to guard against the evils inseparable therefrom. The roots of a plant grown in an imperfectly-drained pot would indicate that those at the bottom had suffered more than those above and by the edge of the vessel; which difference would be referable to the fact that the water had not been equally distributed, and greatest in excess at the point where it would most naturally collect. But it is argued that covering the holes of pots cannot affect the state of things either way, as but little water at any time escapes through these, and that little with equal readiness, whether protected or not. The quantity which escapes will, of course, depend upon how much is given; and there can be but one opinion as to the propriety of its having a ready exit, whether much or little.

This is the more needful, as percolation through the sides of pots, and evaporation from the surface of the mould and from the leaves, cannot be depended upon at all seasons of the year, in all states of the weather, and in every circumstance contingent upon artificial culture, to maintain that medium degree of moisture throughout the entire balls so conducive to the health of plants.

How, then, can there be any violation of principle or rule of good practice, in at least doubling the chances to preserve this state of things, as we can do by careful attention to bottom drainage? I take it, that mould in a flower-pot, like mould anywhere else, is capable of absorbing and holding a given quantity of water, which it parts with only by evaporation, and as taken up by the roots of the plant; but, if more be given than can thus be stored and appropriated, all beyond is superfluous, and should not be allowed to remain any length of time in the pot. How to get rid of this overplus is a primary consideration in all thorough draining, whether it be a few cubic inches of mould in a flower-pot operated upon, or all the acres of a farm. And, when provision is made sufficiently ample to do this, those conditions so necessary to the development and protection of working roots are also provided for.

The mould so treated "obtains a greater capacity for moisture and manure, and imparts to plants greater capabilities for economically working up the materials which they find in both the soil and atmosphere." We grant, when pots are not larger than pints, the same care is not necessary

as for larger ones ; and for the very obvious reason, that, as the mould in pots becomes dry, as regards time, somewhat in proportion to their size, much in the same ratio does the necessity for drainage increase. According to this rule, then, and more especially when fine, large specimens are the objects sought, too much care cannot be exercised in draining well, and at the same time guarding against their ever being choked. For, should this happen, all expectation and hope will be frustrated by the conversion of the mould into mud ; thereby rendering it utterly unfit for the maintenance of plants in good health. But, in the case of small pots, the system might be dispensed with without incurring any such risk. Hence, florists whose stock in trade consists chiefly of small plants, potted in fall or winter to be planted out at the return of spring, seldom use drainage ; some not at all, others only in special cases.

It seems to me, then, that if it is wrong in theory, and useless in practice, to drain flower-pots, it is a theory and practice on the side of safety, and has, withal, received the sanction and support of, by all odds, the most intelligent and capable plant-growers in modern times.

IMPROVED PEAS.

LOOKING over the catalogues of our seedsmen, we find several new peas, which appear to be deserving of notice. Some of these we have already tested ; while others are unknown to us except by description, and have probably never been grown in this country. Two or three kinds originated by Mr. Thomas Laxton, an English grower, who seems to have been signally successful in his efforts for the improvement of this vegetable, are peculiarly fine and promising.

Laxton's Early Prolific Long-Pod, introduced two or three years since, is a valuable accession to our list of half-early or intermediate kinds. We have rarely seen plants more healthy or productive ; and we know of few varieties the pods of which are longer, or that fill out more completely. It is recommended for cultivation, and will probably become a standard sort.

Laxton's Supreme, a more recent pea, will be found included in our seedmen's lists of new vegetables. In England, it appears to be univer-

sally regarded as one of the best of the kinds now in cultivation ; and it comes to us with the highest testimonials of its productiveness and excellence. It is described as belonging to the class of "Early Green Marrows," and attains a height of three or four feet. The pods, which are produced in pairs, measure nearly five inches in length ; while some samples exhibited in London yielded *fourteen* peas each.

It is well known that most of the peas noted for extreme earliness are those with small, round, smooth seeds, which harden quickly, and soon become unfit for the table. Besides this defect, these peas are wanting in the tender, sugary properties so long retained and so highly prized in a later or intermediate group known as "Wrinkled Marrows." To obtain one of this class of peas that should be as early as our "first earlies," and which should at the same time have all the qualities of the marrows, has long been the wish and aim of English cultivators. This *desideratum* Mr. Laxton now claims to have secured ; and such a pea is this spring for the first time offered in the seed-houses in London, and possibly, though we have not seen it, in those of this country. It has been named "*William I.*," and is described as a wrinkled blue marrow, as early as Sangster's No. 1, or Dan. O'Rourke, and as producing very large pods. "The Gardener's Chronicle" pronounces it "a grand acquisition truly."

The supply of seeds of these new peas must necessarily be quite limited ; and they will, of course, be somewhat expensive. Offered, however, as they are in small parcels, it is to be hoped they may find their way to the gardens of some of our experienced growers, where their real merits and value for cultivation in our climate may be determined.

Fearing Burr.

NEW POTATOES.

THE general interest just now manifested in the culture of the potato is certainly remarkable. Scarcely a paper passes our hands that does not contain something relating to the subject. Descriptions of new varieties, directions for planting and tilling, statements of remarkable earliness, records of crops incredible, and directions for the production of new sorts, meet our eye on almost every page.

Now and then we find an appeal in behalf of the old Mercer or Chenango, with various suggestions as to the best method of restoring it to its original productiveness and excellence; showing, that, whatever may be the merits of the new, there are still those who cling with wilful pertinacity to the old. Such persons we pity. They may find encouragement from the experience of the past; but it affords none for us. Their efforts we can only regard as so much time and skill expended in the vain endeavor to impart to age the freshness and vigor of youth. Though there may be seasons of partial success, failures will be frequent and complete. Depend upon it, such cultivators will often be found begging in harvest, having nothing.

It would not surprise us to find this class of people determinedly endeavoring to raise the old St. Michael, Chaumontelle, and other now superannuated and utterly worthless pears, because these sorts were grown in such perfection a half-century or more ago; and this, too, in the face of the fact that their neighbors were yearly gathering the Bartlett, Louise Bonne, Sheldon, and Lawrence in the greatest abundance and excellence. Such cultivators are beyond persuasion, and we can only leave them to the enjoyment of such of the precarious luxuries of a by-gone age as they may succeed in producing.

We are aware that new varieties are not necessarily improvements; but where are we to look for improvement except to these? While we would not be understood as advising the purchase of seed at the extraordinary prices demanded for some kinds, still we think it poor economy to plant any of the old, sickly, and unproductive potatoes, however cheaply they may be procured. We think it doubtful, whether, among all those who cultivated the Early Rose, an individual could be found who would hesitate to say, that the raising of these potatoes from seed purchased at one dollar the pound was much more profitable than would have been the raising of almost any other sort within his knowledge, had the seed been obtained at one dollar the bushel. The merchant is successful, who, wisely availing himself of the means of information at his command, keeps pace with the progress and spirit of the age; and so will that cultivator be who follows his example.

Fearing Burr.

VIOLETS.

By E. S. RAND, Jun., Dedham, Mass.

WHAT more appropriate illustration can we have for the May number than the charming clump of violets which we figure ! There is no flower more truly an emblem of spring, none more heartily welcomed when the winter's cold gives place to the capricious days of April. Let us treat of our violets in the succession in which they bloom.

First, almost blooming in the melting snow, and not at all injured by an occasional snowdrift, is the little single English violet (*Viola odorata*), pretty, and delightfully fragrant. There is no better plant for a warm, sunny bank where the first warm days of spring will call the flowers into blossom, and the whole air will be perfumed with the fragrance. This species needs a rich, deep soil, where it will not be burned up by the summer's sun ; and will not thrive in a dry, sandy soil. When it finds a congenial situation, it increases with wonderful rapidity, not only by roots but by seed. It is also a good kind for early forcing in frames (as described hereafter) ; coming into bloom in November, and continuing all winter. The flowers are small ; but, under glass, they become long stemmed, and, if the soil is rich, often grow much larger than we ordinarily see them.

Next we have the single white English (*Viola alba*), a pretty little flower worth growing for variety, and somewhat hardier than the blue, but by no means so fragrant.

Both of these species should be planted in the grass, where they will usually take care of themselves. In open winters with us in New England, they are frequently killed or much injured ; but, when once well established, they are seldom wholly lost, as seedlings come up plentifully year after year. The double varieties of these two are not very desirable ; the white being rather shy flowering, and the flowers generally having a green centre ; the blue not opening fully, and generally having short stems. These varieties are as hardy as the species.

By far the most popular violet for the florist, and, indeed, also the only one we see offered for sale, is that commonly called the "Neapolitan Violet" (*V. pallida flore pleno*). The foliage is light green and shining, and the

flowers lavender color, often very large and double, very fragrant, and with long stems. This species is easily forced, and is quite an article of trade ; the flowers readily commanding a dollar per hundred, and often, if the demand is large, bringing a much higher price. It forces well in cold frames, and gives an abundance of bloom.

There are two violets which have recently come into notice as "Russian Violets," called respectively the Giant and Czar. They are both very strong growers, with large leaves, and flowers which often measure an inch in diameter. Of the two, the Giant is rather the more desirable ; the flowers being somewhat larger and more freely produced. The color in both is dark blue, and both are delightfully fragrant. They are borne well above the foliage, on long foot-stalks, flower freely, and are easily forced. Too much cannot be said in praise of these violets. As yet, they are rather scarce ; but, as they are easily increased, they must soon become plenty.

During the present spring, a small cold frame has given us flowers which were the wonder of all who saw them. For bouquets, their size, fragrance, and long stems particularly recommend them ; and when more common, the flowers will be in great demand.

Two other new violets have been extensively advertised in England the past year, respectively called the "King" and "Queen" of Violets. The former is a large double blue variety, and the latter a white. When the flowers come perfect, they are very fine ; but, with every care, from a large frame we have only obtained some half-dozen perfect flowers each year : and, in view of our experience, we can hardly consider them worth growing.

Of our native violets, unquestionably the finest is the subject of our illustration (*V. pcdata*), or the bird's-foot violet, though it is by no means the earliest to blossom. It is a low-growing plant with a finely-cut mass of radical leaves much resembling a larkspur, from among which are produced the large, handsome mauve-colored flowers in great profusion. It is one of the most elegant of our native plants, and can vie with any exotic in grace and beauty. In color, the flowers vary from deepest lavender to pure white ; have a delicate, pleasant fragrance ; and last long in perfection. It prefers a light, sandy soil, and sometimes covers dry, barren fields with a sheet of color. The root is perennial, and the plants increase in size yearly. The general opinion that it cannot be cultivated is a great mistake.

We grow it plentifully in the garden, where it comes up year after year, and increases. The only care is to transplant it, when in bloom, with a ball of earth: of hundreds moved in this way, we have never lost a plant.

The common upland blue violets are among the earliest of our indigenous spring flowers; but, in New England, they are seldom found before the first of May. This violet (*V. cucullata*) is very variable in all its parts, and varieties are often mistaken for species: the leaves vary in shape, and the



flowers in size and in color, which is every shade, from nearly white to deepest blue.

The large blue violet of our marshes, in some of its forms, seems to run into the last species, but is generally considered distinct, and is known as *V. sagittata*. The flowers are generally large, long-stemmed, light or dark blue. These two species often are sufficiently abundant to make the fields blue with the flowers.

The wild white violets are *V. blanda*, *lancoolata*, and *primulæfolia*. They are common in damp soils, and, though not showy, are very pretty. *V. blanda* is slightly fragrant : as a rule, however, our wild violets are without perfume.

The common yellow violet is *Viola pubescens* : the flowers are yellow, bearded, veined with purple.

All these are worthy of a place in the garden if they are not found wild in the vicinity. They readily domesticate themselves, and increase freely from seed, sometimes so rapidly as to become weeds.

The species with leafy stems, which flower all summer, are much more desirable for the garden.

Of these we may mention *V. canina* var. *sylvestris* (*V. Muhlenbergii*), with light-blue flowers, and *V. Canadensis*, with white and blue flowers. Both are common in rich woods and damp localities, and thrive when transplanted to the garden. There are many other native violets, some of rare occurrence : all are pretty, and do well in cultivation.

A fact not generally known, is, that violets, after the spring, often produce flowers without petals all summer ; and these apetalous flowers produce seed more freely than the others. The well-known pansy, heart's-ease, lady's delight, is a violet (*V. tricolor* in its varieties), and has, in some places, escaped from cultivation, and become naturalized.

Of European violets, there are two which have recently attracted some notice in the horticultural world ; one of these, *V. cornuta*, a native of the Pyrenees, is a charming plant, and hardy enough to stand a New-England winter. The foliage is neat and small, light green ; and the flowers are light mauve, large, and pleasantly fragrant. Almost any florist can furnish plants.

The other, *V. lutea*, has large, clear-yellow flowers, and, when in bloom, is very showy. It probably is not hardy enough to endure our winters.

Both of these are easily propagated by seed, cuttings, or division.

When we consider that there are at present more than a hundred known species of violets, it will at once be seen how little justice can be done to our subject in an article necessarily confined to a few pages. We would, however, in conclusion, say to all, *Grow violets*. No flower will give you so much pleasure with so little care ; and there is no reason why any

one having a few rods of ground may not gather violets every day in the year.

From May to November, we can have a succession of those which we have mentioned, in the open border, by only caring that the plants are not burned up by the sun. From November to May, we need the aid of a cold frame. Now, how to make it? Prepare a bed of rich soil, and, about the middle of May, procure some small plants of the English, the Neapolitan, and Giant Violets. Set these about nine inches apart, and keep the bed free from weeds, and, as it must be in a sunny situation, well watered; encourage the growth of runners, and by November the bed will be filled with a strong, vigorous growth. As soon as the ground begins to freeze at night, cover the bed with a frame, drawing on the glass at night, but giving plenty of air on warm, sunny days. The single English will begin to bloom in early autumn, and there will be plenty by the middle of November: these will be succeeded by the Giant, and these by the Neapolitan: so that a succession of bloom will be kept up until spring.

As the weather in autumn becomes colder, cover the glass with mats and shutters, so as to keep out the frost, but give light on every sunny day.

During winter, very little water will be required; and on every day when mercury is above freezing in the sun, plenty of violets may be gathered. It is a good plan to have several frames, and to open them in succession; and thus a plentiful supply may be gained.

Any one with a small sunny city-yard can raise violets; and certainly the fragrant blossoms will well repay the small outlay of time and money required.

GLEN RIDGE, April 22, 1853.

GEN. TOTLEBEN PEAR.

By MARSHALL P. WILDER, President American Pomological Society.

SIZE very large; form pyriform, approaching obovate, broad at the centre, narrowed in the neck; surface a little uneven; stem variable, generally long, sometimes an inch and a half, enlarged at the junction, inserted without depression; skin green, becoming nearly yellow at maturity, with

traces of russet, and a dull bronzy cheek ; flesh tinted with rose, very melting and juicy, slightly granulous at the core ; flavor pleasant, aromatic, tolerably rich, inclining to sweet, a little astringent near the skin ; quality very good. Season December and January ; keeps well, and has been pre-



served to March ; but, like many other fine pears, must be used at maturity. Tree hardy, vigorous, and prolific, inclined, from its strong growth, to ramble a little, but, with proper use of the knife, makes a good pyramid : this, on account of the size of the fruit, is the best form.

The Gen. Tottleben was brought to notice in Verschaffelt's "L'Illustration Horticole," some six years since, and is now recognized as among the best new late European varieties.



MR. EDITOR, — As I intimated in my former communication that I might continue it if acceptable, I send you a few criticisms on your April number : —

Sub-tropical Gardening is a subject exciting much attention at the present time, and justly a matter of interest. What can be more effective than masses of cannas, than the broad leaves of the colocasia, or the tall, stately ricinus? But pray tell us, Mr. Hovey, which of the caladiums are of value for bedding, and if they preserve their rich and varied shadings in the full blaze of our summer's sun. I doubt their value or effectiveness for this purpose, and, till further evidence is adduced, must think that the stove is the place to see caladiums in perfection. What is the value of bananas for bedding when the first windy day tears the foliage into shreds? Of the new *Musa ensata* we as yet know nothing, save that it is hardy enough to live in the open ground, with slight winter-protection, in the latitude of Paris, and costs at present a small fortune. It is said to stand the wind; but certainly no others of the family will do so.

The Pink Family, with some good illustrations. — Again our old friend Mr. Breck writes out of the fulness of his knowledge, starting with Gerarde's Herbal, from which he is fond of quoting, and coming down to our own day. And, speaking of Gerarde, many of our writers on horticulture could with advantage take a leaf from his book, and imitate his perspicuity and accuracy.

Hardy Apples. — Here, now, is another experiment in the same direction as that on the native plums which Mr. Adair told us about in March. There is nothing in the whole range of horticulture so interesting as studying the new creations which grow up under the hand of the skillful cultivator; and I almost envy our friends in the North-west the pleasure of watching the gradual development of their crabs into great, juicy apples, as I have no doubt they will be.

I think, if there had been any accidental crossing with the large varieties of apples, the marks of it would have been detected; and therefore infer that there has not been. Has the native *Pyrus coronaria* ever been subjected to cultivation so as to bring out any tendency to variation? If it has not, it will be soon, or our Western horticulturists are not the men I take them to be. Is there any fruit that is not capable of affording new and improved varieties under cultivation? I would not assume that there is without testing the question.

It is not long since that the grape was not more adapted to our climate than common apples are to Northern Iowa and Minnesota; and in the Croton Grape we have another instance of what perseverance and skill have done, and a prophecy of what they will yet do with the crab-apples.

A Chapter on Greenhouses. — Why not say a volume? The plan is extensive enough for one. I like it; there is grace, elegance, and beauty in Mr. Lord's designs. It has been a puzzle to me why greenhouses were usually so very ugly, with every opportunity for beauty of outline, and lightness and airiness of structure. These plans of Mr. Lord's are a step in the right direction. May we be there to see when the present structure is erected; for it is safe to say that the vicinity of Boston will show none more elegant; and I think Mr. Rand may be trusted to make the floral display inside even superior to the architectural beauty of his greenhouses.

Two short articles on *Abutilon vexillare* and *Bulbocodium vernum*. — We need short articles, which, like these, are to the point. The former is a good window plant, and the latter is a gem among spring flowers; this year it bloomed with the earliest snowdrops in February.

Mr. Breck on Lawns. — Yes, a lawn is a possibility; and this article is plain, simple, and to the point. The directions on seeding are good. If any one wishes a lawn, the sooner he disabuses himself of the idea he is to make hay from it the better. If he would have it, every thing must be given up to it, and all the care directed to the one object; then success will attend his efforts; and who shall say the end will not repay the care?

I notice Mr. Burr calls attention to the unusual abundance of the Pine Grossbeak during the last winter. A friend informs me, that they were constant visitors in his garden for several months, and that the snow beneath his dwarf pear-trees was literally strewed with the fragments of the buds they had destroyed. He thinks, however, there are still sufficient buds remaining, and that, on the whole, no serious injury has been sustained.

The Pepper which your artist has so finely illustrated, and which "C. N. B." has so well described, is a noble specimen of the capsicum family, truly; but is it new? I am inclined to think it the Sweet Spanish; for I find the *Piment monstreux* to be synonymous with the *Sucré d'Espagne*, introduced many years since by M. Vilmorin of Paris. But this fact detracts nothing from its real merits, which, I am glad to see, are fully put before your readers. Have you ever noticed that varieties of the pepper seem to lose their pungency somewhat in proportion as the fruit increases in size; so that, in the flesh of the "Monstrous," you have a modified degree of warmth or piquancy, which will prove acceptable to palates that would find the smaller and more acrid sorts decidedly disagreeable? I

have heard it said that he was a brave man who ate the first red pepper ; and I think he was indeed such, if the fruit was of the size of the *Capsicum grossum*.

The true Naomi Raspberry : what and where is it, and *which* is it ? — for it seems that there are two Naomis. Time alone can answer this question ; but I venture the *guess* that it will show the smaller variety to be the Naomi, and the larger to be the Franconia.

Mr. Beadle gives an excellent account of the Philadelphia Raspberry. I have sometimes doubted the existence of such a thing as a perfectly hardy raspberry ; but perhaps they have snow enough at Ontario to cover up their raspberries completely, and then any thing will be hardy. Of good size, wonderfully productive, stands the drought, grows vigorously, and is perfectly hardy, — that is the raspberry to grow for the market ; but for home-use commend me to the Knevet's Giant, with a few Brinckle's Orange, by way of variety. They are worth the extra trouble of covering.

A remark in one of Mr. Cabot's interesting letters, to the effect that cultivators in Europe possess an advantage over those of the eastern parts of the United States in their comparative freedom from noxious insects, has somewhat interested me. Why should it be so ? Is it to be attributed to climate ? or are birds more numerous and serviceable there than with us ? As we extend the cultivation of fruit in this country, the means of subsistence are multiplied for birds and insects, and both appear to be steadily increasing ; the latter, however, generally receiving the lion's share. Which will be victorious in this common struggle, the future must determine. *Bismarck.*

MUSHROOM-CULTURE. — I take the present opportunity to thank you for the advice you gave me on the growing of mushrooms. I made my first bed with the material I named in my note, — chiefly the long litter from the stable, — which I had thrown into a heap to ferment itself dry, with a coating of an inch and a half or two inches of droppings on the surface. I spawned the bed when at about seventy-four degrees, and earthed it at the same time with about two inches of light turfy soil. The result is, that I have now, in about seven weeks after spawning, as fine a bed of mushrooms as any one could wish to see. I have since made two more beds entirely of droppings, with a little of the short litter. The one has been spawned about three weeks, and the other has had the last coat of droppings put on to-day ; but, if these turn out as well as the first, I shall be quite satisfied.

I write this for the encouragement of a correspondent, who, a few weeks back, was asking for information on this subject, and stated that "he had read all that had been written in our Journal, and had tried several times, but never had any mushrooms." I may state, that I am quite a novice in the affair myself, never having made a mushroom-bed in my life before ; neither had I ever seen one made : but I worked as nearly as possible according to the directions you gave me, and by what I had read from time to time in our Journal ; and I think, if your correspondent will do similarly, he will soon have plenty of mushrooms. — *English Journal of Horticulture.*

MASSACHUSETTS HORTICULTURAL SOCIETY. — The Annual Report of the Fruit Committee, by W. C. Strong, chairman, is, as usual, of great interest. We publish a portion below, and shall give the remainder in our next number : —

“ It seems to be a wise custom, in connection with our list of premiums awarded, also to place upon record the fresh experience of the year, and to add such suggestions as may have been gathered by the peculiarities of the season. Such records, covering a long series of years, would form a practical basis, from which alone safe theories might be constructed. We are not accustomed to make such extended observations, or enter so much into detail, as might be desirable, in order fully to attain the result spoken of; yet the brief and general survey of the year may be of some service to this end.

“ The winter of 1867–68 was more than usually severe; and in many places the Bartlett Pear, for example, was seriously injured; and this, as also some other varieties, blackened and died in midsummer from the effect of the winter's cold. In some cases, also, the more hardy kinds of grapes were winter-killed. In addition, the spring proved to be extraordinarily backward, so much so, that, on the 1st of June, it was thought that the grape-crop would not ripen. The whole period covering the blossoming of the peach, cherry, pear, and apple, was also excessively wet. As a consequence, many varieties did not set a sufficient quantity of fruit. Still, the profusion of bloom, which was quite marked, especially with the apple, prevented any serious lack. We may say, then, that the prospect for fruit on the 1st of June was by no means flattering. Yet the result which crowns a year of such adverse circumstances should give renewed confidence in the success of fruit-culture in our section.

“ The experience of the year teaches the importance of securing every condition to success for each variety of fruit. It is observed that the farmer who enriches his fields with a plentiful supply of stable-manure is seldom heard to complain of drought; and, if his land is well underlaid with tiles, he talks very little about excessive wet. He is, to a degree, independent of extremes: all seasons are good seasons to him. So with the fruit-culturist: let him secure all possible conditions, and he is measurably independent of circumstances: the adverse seasons even proving a benefit to him, because of the enhanced price of his fruits. As an illustration, take the case of Mr. Daniel Clark of Waltham, who exhibited as fine specimens of Concord Grapes as can ever be found in the most favored seasons, in the best sections for the vine. These were grown in open culture, without any protection except a ledge of rock for a trellis; were fully ripe Sept. 11; and were so superb as to be in demand at three times the ordinary price of grapes. Here is a result in one of the most adverse years ever experienced with the grape; the time of ripening being also advanced, at least ten days from the average of years.

“ It will be said that the situation was peculiarly favorable. Precisely so; and this is the point we wish to bring to notice. These peculiarly favorable conditions should engage the constant attention of the culturist. These are synonyms of success. Peculiarly favorable situations make the price of the vineyards of the Rhine to reach a point, which, to an American cultivator, would seem quite extravagant. The Langon, St. Julien Vineyard of a hundred acres, sold

for thirteen hundred dollars per acre in 1851. Mouton sold, in 1853, at thirty-six hundred and twenty-nine dollars per acre. These are in the Bordeaux district. Favorite localities on the Rhine are seldom sold, but are estimated as high as eight thousand to ten thousand dollars per acre in the settlement of estates. If, then, there is such a determined value for the choice spots exactly suited for the requirements of the vine in Europe, why should we not seek for and prize the sunny hillside ledges, of which there are thousands in our Commonwealth, similar to Mr. Clark's, which could be made, with equal certainty, to produce similar results ?

“ Nor is this suggestion applicable to the grape alone. Every fruit has its conditions. And it is only by a careful study of the peculiarities and requirements of each that the highest results and the most complete success can be attained. Though this truth is so obvious, yet it is also true that very few perfect trials in fruit-culture have yet been made in this country. This work has generally been subordinate to other occupations ; and the orchard has been located on the homestead, without special regard to the fitness of the means to the end in view. A prominent example may illustrate this fact. Ex-President Wilder has given his pear-orchard a reputation the country over, and he has made his experiment a decided success. Yet he located his orchard on a hard, rocky soil, by no means naturally adapted to the pear, and he has always said that the fruit obtained from his soil has come by main force. The location was chosen because of its nearness to his residence. His, then, is by no means a full illustration of what can be done with the pear. In order to the best results with the pear, *the precise* soil — a clay loam, retentive yet friable, with a porous, or else a most thorough and deeply-drained subsoil, a level, humid tract, not exposed to dry and exhausting winds in short, *the precise spot* — is to be chosen, without regard to convenience and nearness to the homestead. Herein lies the secret of the fact that Cambridge carries away three-fourths of our pear prizes, year after year. Her soil, her low, level tract so near to the water, and yet so well drained, secure to her such advantages, that only good culture is necessary to produce the largest results.

“ Now, the conclusion from this is not that the general culture of a variety of fruits is impracticable and must be abandoned. Very far from this. Our soil and our climate permit a fair degree of success wherever ordinary opportunities are secured. Again : the great proportion of home-grown fruit is for home use, and the producer is more than content with ordinary size and average success. Probably it is a more general custom in Massachusetts than in any other State of our country, that each owner of a freehold has a few pear and apple trees, two or three grape-vines, and the complement of small fruits. This is a wise economy, resulting in moral and social, as well as pecuniary gain. Still it is desirable for our large city-markets that the most extensive, practical, and scientific experiments in fruit-culture be attempted. With the apple, for example (a long and too tedious experiment for most men of enterprise), how desirable is it that men of capital should select some extensive pasture slopes, of which our State furnishes an ample supply, such as are just suited for this fruit ; so far removed from city precincts as never to be endangered by the fever of land speculations ! An orchard planted on a site thus selected, and being suffi-

ciently extensive to require the constant care of a judicious cultivator, would surely be a source of pride and profit to the owner, and, in itself and in its influence, a public benefaction.

“The apple is mentioned, because so many have been discouraged with this fruit. But it is folly to enumerate the many failures. A hundred failures do not prove so much as one decided success. If the Messrs. Clapp can keep a perfectly healthy and productive apple-orchard in the very centre of the canker-worm district, so can we all, if we put forth the same energy, and secure the same conditions of success. If Mr. Wellington can this year, and continually, produce, in open air, as superb Isabella Grapes as ever ripened on the banks of the Ohio, the same result is possible to each of us, just as surely as is the axiom sure that like causes produce like effects.

“The main lesson which we would draw from the adverse influences of the season, from the many failures and the honorable and decided exceptions, is this : that we study with more care the requirements of each kind of fruit, and, wherever extended culture is intended for market-purposes, that the location be selected solely with reference to the adaptedness of the site to the particular fruit determined upon ; that, whenever we are compelled to choose a site not naturally adapted to the various kinds desired, our first aim should be to make as near an approach to the demands of Nature as is possible ; and that, under seriously adverse circumstances, we be content if we can secure a sufficiency for home supply, and this of moderate quality, and never allow ourselves to judge by our meagre results that fruit-culture as a business, and under the best conditions, is a failure.

“In noting the novelties and the varieties which have come under our observation, we take them in the order of the season. The exhibition of forced fruits was more limited than it should be ; the peaches of Mr. C. S. Holbrook being the only superior specimens : and of these it is sufficient praise to say that they maintained their accustomed standard of excellence. We may safely say they are a *permanent* and *reliable* crop.

“The strawberry, our most humble, is also one of our most important fruits. As an early acid for the system, its importance cannot be over-estimated, and its ease of management, not requiring twenty or thirty feet of ladder, in order to be reached, like the coy cherry, for example ; also its quick and abundant return of results : these are considerations which place it in the front rank. Hovey's Seedling maintains its position among marketmen. Wilson is steadily gaining upon Boston prejudice, in spite of its poor quality. No other variety is so prolific, hardy, and uniform, and sugar does in a measure correct its quality. Jenny Lind is earliest, and yet, for some reason, has fallen into disuse. La Constante and Triomphe de Gand are kept for the prizes ; the latter also being retained by many as a general crop. Jucunda disappointed the expectations of most on its first year of trial. This season it has gained friends, and many good judges regard it favorably. Agriculturist is poor in quality and appearance, is unproductive, and will take its place on the rejected list. A seedling raised by Mr. William Underwood, from La Constante, and of the type of its parent, was more vigorous and more hardy, though smaller, than La Constante, and may

prove to be desirable. A fine dish of Hautbois was exhibited by Mr. J. B. Moore, asking for a name. Though unusually large, it was probably La Belle Bordelaise, a variety of which many would be fond, and which deserves more extended culture for home-use.

By invitation from Col. Wilder, your committee visited his estate on the 7th of July, for the purpose of inspecting his beds of seedling strawberries, especially the one which he has designated as No. 13. Without dwelling upon the many objects of interest, and the bountiful hospitality of our host, we confine our report to the strawberries in question. We found the seedlings growing in several locations in beds from one to three years old, and in proximity to standard varieties, such as the Hovey, the La Constante, and the Triomphe de Gand. All the beds seemed to be under good but not extraordinary culture; the older kinds yielding only an average crop. Seedling No. 60 compared very favorably with the Hovey; but it does not at present sufficiently indicate superiority to older kinds to require a more extended description than has been given in previous reports. It should here be stated, that during the absence of Col. Wilder in Europe, by some misunderstanding, the Nos. 13 and 60 were interchanged in our report of last season. The description of No. 13, as given in the report, belongs to No. 60,* and *vice versa*. The varieties are quite distinct, and are entirely separate in the grounds of Col. Wilder.

No. 13 was the chief object of interest, and fully maintained the reputation of two previous years. As there are many indications that La Constante is one of its parents (though there are also strong points of difference), we may with propriety compare it with this variety. In health and strength of foliage, the beds of No. 13 were in marked contrast. In quantity of fruit, there was the same contrast; the amount on La Constante being small, as is usual; while there was a great profusion on all the beds of No. 13 growing side by side. The foliage seemed to be just sufficient to secure the uniform maturity of all the berries. A marked peculiarity in the quality of No. 13 is a distinct Hautbois flavor, not too strong to be objectionable to any taste, and which will be most agreeable to those who are fond of this flavor. As there is not a trace of this flavor either in La Constante, Hovey, Triomphe, and the varieties which have surrounded it, and from which it sprang, it is singular that this aroma, so noticeable both in taste and fragrance, should be found in the offspring. This seedling has only been fruited on the grounds of the originator, and it is not safe to give a positive opinion as to its adaptedness to the various soils and climates of our country. And yet we may say that we have seen it for three successive years in various localities under Col. Wilder, and cannot doubt that it is hardy, vigorous, highly productive; of largest size, superior in quality, beautiful in appearance, firm enough for market-purposes; and, should it sustain the character with other cultivators which is indicated on the estate of the originator, it will prove to be the most

* The report for 1867 should read as follows: "The favorable opinion entertained last year of the seedling strawberry of Hon. M. P. Wilder—a cross between La Constante and Hovey's Seedling, and now designated as No. 13—is confirmed this season. The fruit is of the largest size, of good flavor, and in appearance a medium between its parents, not so polished or glazed, and with seeds more embedded than in La Constante. An examination of the bed gave indications of vigor and decided productiveness."

valuable of the many contributions which Mr. Wilder has made to horticulture, and will worthily bear his name. With his permission, we are authorized to, and do hereby name his strawberry seedling No. 13, 'The President Wilder.'

"*Cherries.*—This fruit continues to be scarce, and it is doubtful if it will again become abundant in our market. The cost of picking is a serious consideration. Still this is almost the only cost, and certainly would be readily met, provided we could have the crops of former years. For home-use, at least, the cherry must have a place. Black Tartarean took our first prize, as is usual; but we must caution the public that this variety is by no means as hardy or as certain as many other kinds of fair quality."

AN EXCELLENT FERTILIZER. — We advise our readers who have farms and gardens to cultivate, to prepare as large a quantity of the fertilizer we suggested and recommended in the April number, vol. ii. of "The Journal of Chemistry," as they possibly can. It embraces in its composition quite every element required in the growth and maturation of roots and the cereal grains; and it has the advantages of being comparatively cheap and easily prepared. No fertilizer we have yet devised (and we have prepared and experimented with a large number) affords more certain and satisfactory results than this one; and those who prepared and used it last season are extravagant in their praises of it. It supplies a most desirable dressing for fruit-trees and vines. We use no other fertilizer for our grapes; and, if any of our friends have had better results in their cultivation than we have, it will afford us pleasure to publish their successes. The method of preparing the fertilizer is as follows:—

"Take one barrel of pure, finely-ground bone, and mix with it a barrel of good wood-ashes; during the mixing add gradually about three pailfuls of water. The heap may be made upon the floor of an outbuilding, or upon the barn-floor; and, by the use of a hoe, the bone and ashes must be thoroughly blended together. The water added is just sufficient to liberate the caustic alkalies, potash and soda; and these re-act upon the gelatine of the bone, dissolving the little atoms, forming a kind of soap, and fitting it for plant aliment. It must be used in small quantities, or in about the same way as the so-called superphosphates. A barrel of this mixture is worth two of any of the commercial fertilizers, and the cost will be but about half as much. It remains to be added, if the bone-meal and ashes are very dry, four pailfuls of water may be required; but care must be exercised not to have it inconveniently moist. It will be ready for use in a week after it is made. *Pure, raw, finely-ground bone* and the best of ashes should be employed. If ashes cannot be procured, potashes may be employed as a substitute, by dissolving *twelve pounds* in ten gallons of hot water, and thoroughly saturating the bone-flour with the solution. A barrel of dry peat or good loam, free from stones, may be mixed with the bone after adding the potash. Care must be used not to have it too moist or too dry. It should not form a sticky mass. In using, a little earth should be scattered over it before dropping the seed. The seed should not fall directly upon it. The effect of this fertilizer will not be noticed early in the season; but, as it advances, the crops will become vigorous, and yield a fine return." — *Journal of Chemistry.*

THE second annual meeting of the New-York State Grape-Growers' Association was held at Canandaigua, Feb. 18. The following officers were chosen: *President*, Hon. E. B. Pottle, Naples; *Vice-Presidents*, C. L. Hoag, Lockport; C. D. Champlain, Hammondsport; Dr. H. H. Farley, Union Springs; A. S. Moss, Fredonia; Dr. C. W. Grant, Peekskill; *Corresponding Secretary*, G. F. Wilcox, Fairport; *Recording Secretary*, E. F. Underhill, Brocton; *Treasurer*, M. D. Munger, Canandaigua. Hon. Marshall P. Wilder of Boston, and Dr. John A. Warder of Cincinnati, were elected honorary members of the association.

The president, in his address, said, "There are localities in nearly every section of the State, even in the extreme north, sheltered nooks, having the proper adaptation of soil and other influence, which have made the growing of this delicious fruit not only profitable in the ordinary sense, but exceedingly so when compared with the results of growing the other products of our State. In all such localities, the cultivation of the grape should be encouraged. Not only should we seek out such localities, but it should be our duty to learn the variety best adapted to them; for we know full well that a grape which thrives well in one place or section may be and often is worthless in another. The Delaware may be set down as one of the best American grapes; but when planted in a soil adapted to the successful culture of the Catawba, Isabella, or Diana, it was worthless: and the latter, when taken from the sterile soil that develops and makes them what they are in certain localities within our State, and transplanted to the rich soil needed for the Delaware, exhaust themselves in needless growth of wood; and the fruit gathered, rarely, if ever, repays the cost of culture. And it will be quite as impossible for us to establish a standard for pruning, for planting, for cultivation, or any thing in regard to the grape, which shall be universal in its application, as it is to establish a standard of variety. All these matters have got to be considered with reference to the strength of your soil; and when you have brought sagacity and experience to bear upon the question of culture, and ascertained what your wants are, you can adapt yourself to it."

Mr. Coxe of Auburn spoke in favor of Allen's Hybrid. In his experience, the way to make the Allen's Hybrid produce was to starve the vine. With generous culture, the fruit was poor and the foliage mildewed; but when planted in very poor stony land, overlying limestone rock, the third year it grew vigorously, and rewarded him with eight pounds of fine fruit, without a mildewed leaf or an impaired berry. He had applied sulphur twice during the season. Some other vines had succeeded as well by applying common gypsum.

Mr. Keech of Waterloo, having been unsuccessful with the Allen's Hybrid, thought the difficulty might be in the mode of pruning, and commenced experimenting on three vines. He formed two horizontal arms to a vine, each four feet long, and cut all the canes down to within three inches of the arm. All the buds which started he allowed to remain, and they grew to the top of the trellis. He did no summer pruning, but let each shoot grow as far as it would. After he had picked several clusters, he gathered the fruit from one of the vines, and they weighed thirteen pounds of very handsome fruit. The next year, he took off twenty-two pounds of as handsome fruit as he had ever seen. The vines were

planted in a light sandy soil, with no manure at all. Neither year was he troubled with mildew.

Mr. Welles of Canandaigua said the Eumelan was remarkable for its perfect ripeness and the purity of its flavor. Two clusters he had allowed to remain in his office, which was heated by day only, and the berries were dried into perfect raisins. It was a very sweet grape. The only objection he saw was its large and abundant seeds.

Mr. Bronson of Geneva believed, if Allen's Hybrid bore a good crop only once in four years, it paid. He would plant Iona and Israella, the latter for its beauty. The demand for Rogers's Hybrids was very great; they suited the masses better than a high-flavored grape like the Iona.

Mr. Underhill of Brocton, Chatauqua County, said, the Iona, in several vineyards, had produced for the first time last fall, and the result had more than exceeded expectations. The fruit was excellent, the yield good, and the health of the vine all that could be wished. Rogers's Hybrids were increasing in favor, especially the Salem, which he regarded as the best. The Clinton, which had been sadly neglected, was growing in favor each year, by reason of its unsurpassed healthiness, enormous yield, and its value for red wine. For a dry white wine, the Iona was regarded as best, the Diana next, and the Delaware next. The Martha he regarded with disfavor. Though vigorous and healthy, it was more foxy than its parent, the Concord.

Mr. Perry of Canandaigua said Rogers's Hybrids should be planted in alternate rows with Hartford, Concord, or Delaware. By this arrangement, the Rogers would fertilize better, and have solid bunches, instead of the loose bunches which they often have. The Creveling should be planted in the same manner. Mr. Perry's statement was corroborated by the president, Mr. Keech, and others.

Mr. Coxe of Auburn said, that, while his neighbors had suffered from the blue beetle, he had escaped by turning a large number of hens and chickens into his vineyard.

The president, Mr. Pottle of Naples, said he had never known a Delaware vineyard which had been summer pruned that was satisfactory in its results. Mr. Byington, a neighbor of his, had a Delaware vineyard which made a most remarkable growth, some canes making from eighteen to twenty-two feet in a single year. They were planted upon a very stony but rich piece of bottom land, and it fed the vines well, the stone insuring perfect drainage. The vines were ten to twelve feet apart in the rows. The clusters and berries averaged nearly or quite the size of Isabellas, and sold in the New-York market at from twenty-three to thirty-two cents a pound. He took, in one instance, fifty-three pounds from a single vine. These vines did not have a single leaf or tendril taken from them during the season. They were pruned on the system of long canes. He attributed this success, first, to the perfect underdrainage, and the amount of fertilizing material in the soil, and, second, to the abundance of wood to sustain the grapes.

When they could find a locality (and there were such) that would with certainty ripen the Isabella and Catawba, those grapes would produce as generous a re-

turn as any American grape. He had a vineyard of five acres of Isabellas, which had never failed in ten years to ripen the crop, though he did not mean to assert that it ripened all the grapes. Four years ago, that piece of land paid him, at ten cents a pound for the product, three thousand two hundred and sixty-four dollars.

Mr. Shaw of Middlesex, Yates County, said his choice of all varieties was the Iona, and, next to it, the Diana. The latter had always borne good crops, with the fruit evenly set, and had been the most profitable of any variety he had cultivated. The Lydia was an excellent white grape, and had not shown any disease.

Mr. Wagener of Crooked Lake had one piece of Ionas that had borne crops for two years, and had done well. The vines grew satisfactorily, and bore heavily of well-ripened fruit. They were as ripe on the 15th of September as the Catawbas were on the 15th of October. The Israellas had done well, and were sufficiently advanced to send to market the first of September. The Creveling bore scattering and loose clusters, though planted in with other varieties. He regarded the Iona as best, the Delaware next, and, perhaps, the Catawba and Diana next. For an early grape, he would plant the Israella. It had proved with him to be a good keeper, being good until the following January, and retaining its flavor well.

Mr. Underhill of Brocton called the attention of the association to an insect, which, in his locality, had committed ravages upon young vines. Two years since, he discovered in August, in a vineyard planted that year, that the leaves of his Delawares, Israellas, and Ionas, and especially Adirondacs, were badly riddled by a little drab-colored bug nearly a quarter of an inch long, which so set back the growth, that, at the end of the season, the roots were but little stronger than when they were set out. The past year, he looked out for the trespasser, and applied slacked lime early in the morning. He was inclined to believe it checked their operations, though not certain that it was the best remedy.

Hon. E. B. Pottle of Naples, E. F. Underhill of Brocton, F. L. Perry of Canandaigua, Dr. E. Van Keuren of Hammondsport, Dr. A. Bushnell of Peekskill, and C. L. Hoag of Lockport, were appointed a committee to investigate, in their respective localities, the causes of the diseases of the vine, and its enemies, and the best remedies; each member of the committee to report at the next annual meeting.

It was decided to hold the second annual fair of the association at Canandaigua, on the fifth and sixth days of October, 1869; and the next winter meeting at Rochester, on the third Tuesday in January, 1870.

PLOUGHING ORCHARDS.—The following experiment by Mr. H. Dayton of Alden, Erie County, N.Y., is better than a column of theorizing. His orchard of two acres and a half, which had produced very little fruit for a number of years, and most of that wormy, was carefully ploughed less than two inches deep late last fall, and harrowed and cultivated two or three times in the early part of the present season. The result is, he has picked, this fall, over four hundred and fifty barrels of fine, smooth apples, bringing in about sixteen hundred dollars. The soil was a sandy gravel, and had been in grass about ten years.

THE March meeting of the Potomac Fruit-Growers' Association was held at the Friends' meeting-house, Alexandria, Va., President Bramhall in the chair. The discussion of fertilizers led to the opinion, that farmers had better buy their own guano and simple phosphates, and mix themselves, if a mixture is wanted, in order to avoid the humbugs which are now flooding the market. Marl can be delivered anywhere on the Potomac for a dollar per ton: this is an excellent fertilizer, cheap, and much needed by our soils. Col. Close considered marl and stable-manure good, but thought it would hardly pay to haul either when concentrated manures, such as Peruvian guano, bone-dust, and poudrette, could be bought at present prices. Be sure, however, to purchase a good article, and then compost to suit your soil. We must not be too much afraid of being humbugged; a little, once in a while, makes one sharp. Dr. Lloyd believed, from experiments which he had made, that new manure is better in every respect than that thoroughly rotted.

Chalkly Gillingham read a very instructive paper on fruit-destroying insects and their insect enemies.

Orchard culture.—Judge Gray: The idea entertained by many, that the land is too valuable to be entirely devoted to the orchard, is a mistaken one. If we want good fruit and abundance of it, we must give it the land and the culture it needs, and it will amply repay all attention received. An orchard at Niagara, N.Y., was sown to buckwheat for sixteen years, and not a bushel taken off. It was only ploughed in the spring to sow again. The grain afforded ample feed for the poultry that ranged through the orchard. By this system, the soil was changed from a light sand to a rich loam: the trees were thrifty, and bore well. It is cheaper, in my opinion, to sow buckwheat than fertilizers, and does much more good. Apply nothing more than a light dressing of plaster; plough, and sow again. On heavy land, the system is probably equally beneficial, tending not only to enrich the land, but to make it more friable.

Judge Bramhall remarked, that heavy lands at the North were immensely improved by ploughing in green crops, and cited several instances.

C. Gillingham: I think the system followed at Niagara the best that could be devised for the purpose. The ground not being ploughed until spring, there was no inconvenience in gathering the fruit; and, moreover, I believe a ripe crop much better to plough in than a green crop. The idea that we can, in an orchard, sow and reap, and take off all kinds of crops, without returning an equivalent, and still gather a harvest of fruit, is wholly wrong.

S. B. Walton: I believe the secret lies in having the ground covered. I think if it was simply *covered over*, with no crop or fertilizer whatever, the land would improve.

The association adjourned to meet at the Columbia schoolhouse, Closeville, Alexandria County, Va., Saturday, April 3, at 10. A.M., and a punctual attendance was requested. The president invited the presence and co-operation of the ladies, and asked their assistance in the good work of fruit-raising.

Correspondence is solicited on all matters of interest and importance pertaining to fruit-culture, and all inquiries will be duly answered. All correspondence should be addressed to Col. James T. Close, Cor. Sec. P. F. G. A., Arlington, Va.

THE South-western Fruit-Growers' Association met at Terry, Miss., on the 13th of January. The president, Dr. M. W. Phillips, in a brief but spirited and practical speech, explained the objects of the association. The subject of packing and shipping peaches came up; and well-ventilated boxes holding from half a bushel to a bushel were recommended, the fruit to be not fully ripe. For strawberries and other small fruits the American Fruit-basket for distant markets, and the American Free Fruit-box for markets near by. Mr. J. B. Statham of Hinds County reported his success in fruit-growing. His orchard came in bearing in 1863; and he has had good crops every year since, with the exception of 1867. His peach-trees the past season were very profitable. His apple-trees are mostly Red Astrachan and Early Harvest, with a few Georgia Red, a late variety, ripening last of November and first of December; a good winter apple, keeping well in Mississippi until the first of June. Mr. Redmond produced a jar of pickled figs of home preparation, that would be creditable to the best pickle-manufacturers in Boston. Dr. Swasey, D. Redmond, E. F. Russell, and the president were appointed a committee to prepare an address to the Southern horticultural public on the profits and prospects of Southern fruit-growing. The association adjourned to meet at Jackson, Miss., on Wednesday, April 14. — *Southern Horticulturist*.

THE Farmers' Club of Dubuque, Io., March 27, 1869. — Judge King read an interesting paper on fruit-growing in the West, containing an account of two seedling pears raised by Mr. Senis Heugle of Dubuque, from the White Doyenné, which first produced fruit in 1858, only five years after planting. These trees now measure about a foot in diameter, have large, spreading tops, limbs clean and smooth, are hardy and perfectly healthy; never having suffered the loss of a twig by disease. The location is unsuited to the pear; yet these seedlings are probably worth all the pear-trees in the city. The fruit of the two trees is different, and ripens at different periods. The judge's paper induced interesting commendatory and corroborative remarks from the members. Many instances were related of the success of native seedling fruits in Northern Iowa, where the extremes of climate are very great; and the principle was laid down, that seedling fruits grown in the North-west, including grapes, are much better able to withstand the sudden changes of that climate than those imported, as Nature, with but few exceptions, adapts the seedling to the soil and climate in which it grows.

[We regard this principle as entirely correct, and deem it a subject for congratulation, that cultivators are acting upon it, not only by raising new varieties from the cultivated species, but by improving the natives, such as the plums and crabs lately described in this Journal; for, if the indigenous varieties are more hardy than the foreign, the argument is much stronger when not only the variety but the species is indigenous.]

SPECIMENS of Climax and Bresee's Prolific Potatoes were exhibited by W. C. Strong at the Massachusetts Horticultural Society's rooms, April 3.

A curious sport from the Baldwin Apple, strongly resembling the Ross Non-pareil, was also shown. It is permanent when grafted.

THE PROPAGATION OF SCARLET GERANIUMS FOR BEDDING PURPOSES, WITH A SELECT LIST OF VARIETIES. — Simple as the propagation of this useful but showy class of plants may appear to the practical horticulturist, yet to the amateur it may be a difficult task, because other occupations or engagements may so arrest his attention, that he may not have the time at his disposal for making himself acquainted with all the details that are allied with success and failure.

If you have not commenced to propagate, the sooner you commence the operation, the better, so that your plants may become strong and well established by the period the dull months of the year have arrived.

The most of us do not care, just when the plants are in full bloom, to begin to deprive them of numerous flowers by the cutting-off the shoots: but it is rather an advantage than otherwise, if judiciously done; and that is by so shortening the shoot or branch, that you leave some strong laterals just pushing forth: these will grow very fast, and, with many sorts, continue to flower till they are checked by frost.

In selecting your cuttings, make choice of the wood which is a brownish color, as that will prove to be the ripest: it should be firm, and not in the least degree sappy or soft. I make it a rule to cut off the lower branches, as they, being generally the first in the early part of the season to grow, have by this time become the hardest.

In preparing the cuttings, I do not cut them in short pieces, as I have observed some persons to do, with the idea that they will by that means insure dwarf, or rather bushy plants. If I can, I procure shoots that have lateral or side branches. Having cut the shoot to a moderate length, it is inserted with the side wood attached. By this method, I secure some good plants by the time I require to pot them. Of course, this system must depend, in a great measure, as to whether you can spare the wood so large; because, if you are short of the variety, and are anxious to multiply the number, then you must resort to the practice of making short lengths, so as to make the most of your wood.

The advice to allow your cuttings, after they are prepared, to remain for some time exposed to the air before you attempt to insert them, under the idea that they strike much quicker, because, by subjecting them to the influence of sun and air, some persons believe that the sap they contain is so reduced in quantity that all liability on the part of the cutting to decay is removed, is based upon a theory which is now entirely exploded.

As regards my own practice, I dissent from adopting such an opinion; for I believe, that, the more you can retain of the vitality of the cutting previous to insertion, the more readily does it root.

When large quantities have to be propagated, and you are desirous of getting as many as possible potted into large 60-size pots singly, — as soon as they are rooted, and you have room for housing them in houses or pits, during the winter thus prepared, we adopt the following method in striking them: — Having with a fork loosened the soil, on a border, that is fully exposed to the sun's rays, we mix with the said soil some good decayed leaf-mould, if procurable. We then dib our cuttings in rather thickly; and that we may preserve

the sorts distinct, in addition to labelling them, we follow up each batch with a variety as different in habit of growth and color of foliage as is possible, so that, if the label is lost or removed, we are thus the better enabled to keep each variety intact at the time of potting. As soon as we perceive they are rooted, or have commenced to grow, we pinch off the point of cutting, so as to induce it to make side shoots.

Those who cannot spare the room for potting them into single pots in the autumn should obtain some six-inch or 32-size pots, add plenty of drainage, and then fill them with some good, sandy soil; into each a dozen or more cuttings, according to the strength of the variety, should be placed. Then stand the pots on a border of coal-ashes partially shaded from the scorching rays of the sun. Give a thorough watering, not repeating it again, except over the foliage with the fine rose of a watering-pot, until they show signs of being rooted. The pots, on this occasion, may be closely packed together, as that will assist to check a too rapid evaporation from the soil; but, in about three weeks from the period of putting in the cuttings, they should be cleansed of all decayed leaves, and the pots stood farther apart from each other, so as to prevent the cuttings as they increase their roots from being drawn into a weak growth. Thus managed, the after-attention should be, when stored in the house, to keep them clear of all decayed leaves, and to stop the shoots when required, and give but little water during the winter months. They will then, early in the ensuing year, be in good condition to be potted off singly.

The following are among the best of the bedding varieties: —

NAME.	REMARKS.
Attraction	Strong grower; flower-stalks erect above the foliage.
Cybister	A fine nosegay; scarlet with a splendid truss.
Lord Palmerston	Tinted crimson; good bedder and very free to flower
Punch	A strong grower, with noble truss of flowers; suitable for large beds.
Stella	A free grower and bloomer; crimson nosegay.
Tom Thumb	One of the best scarlet, for general bedding.
Trentham Rose	{ Very free to bloom, and continues so to the latest period of the season; a fine cerise-color flower.

Of the pink section, Christina is not surpassed.

PROPAGATING VERBENAS. — There are various methods adopted for propagating them. Some prefer to strike their principal supply in the spring; and at that period the smallest cuttings of young wood you can procure will root quickly in silver sand, the pots being plunged in a brisk, but sweet bottom-heat. And, that they may obtain strong plants for affording them shoots, they pot a few of each sort of the spring-struck plant, spotting them singly; and by pinching the tops of the side shoots, so as to induce a bushy growth, and repotting them when required during the summer months, they have, by the autumn, some strong plants to stand over the winter either in the houses or pits. And then, if subject to a nice moist but warm atmosphere early in the spring, single plants so managed will supply a large quantity of cuttings.

The plan is very good, where room is an object; but it is best, in my opinion, to propagate as many plants as you can early in the autumn; and bottom-heat is

not needed for that season, if you commence at once. First prepare some sandy loam, adding about a fourth of good decayed leaf-mould or rotten dung. Examine it well to see that there are no worms. Having mixed it, then procure some five-inch or 48-size pots; let them be filled to about a fourth of their depth with drainage; then fill them with the soil, adding on the surface about an inch of silver sand. In selecting your cuttings, the wood should neither be too hard nor soft, but of a medium texture. Before you insert them, cleanse them of any insects that may infest them. It is not advisable to put them in so thick now as in the spring, because, if successful in rooting your cuttings, you will allow them to remain in the stone pots through the winter months. Having inserted them, gently sprinkle them with a fine rose of a watering-pot; then place them under hand-glasses, or in a close frame, where they must be shaded from the sun's rays. They will not require the admission of any air till they show signs of having begun to root. Occasionally examine them, and remove any that are decayed. When struck, they should be gradually inured to the weather, so that the shoots may become firm.

THE INFLUENCE OF SUN-HEAT ON FRUITS. — Never was there a greater mistake made than that of supposing that fruit produced in the shade has the best flavor: it is a false notion, the mere chimera of half a century ago. The Black Hamburg Grape is, to some extent, an exception; for its berries will not color if the branches are deprived of too many of their leaves, so as to let the sun in amongst the bunches too freely; whereas, the Muscat of Alexandria will not attain its rich amber color if so much overcrowded with leaves as to keep the rays of the sun from penetrating freely amongst the bunches. A pine-apple produced in the winter has not the flavor of one ripened in the summer months of the year, when the sun is powerful. Again: under the old method of planting strawberries in beds four feet wide, the fruit is not to be compared, either in size or flavor, with that of those planted out in single rows. Now, what is the reason of this? I contend that it is in consequence of the action of the sun upon the fruit. The fruit shaded by leaves will always be more or less insipid and worthless, as compared with that on which the sun has had full play. It is the sun that puts flavor into our fruits.

CELERY, now a common dessert of every table, it is said, came into the garden-plants from the following circumstance: An Italian nobleman, in a paroxysm of passion, slew his only brother. The church condemned him for three years to a monastery, to prayer and penitence, his food to be of the weeds which grew in the enclosures about his prison. Celery, bleached in the shade of the cloister, then became a favorite food; and, when released from his confinement, he transplanted the weed, then but little better than a night-shade, to his garden: it was set in trenches to bleach it, and to make it crisp and tender for his palate. He was a leader in fashionable life; and his example was imitated throughout Europe; and celery became at first a garnishment for the table, then a luxury, and now a necessary for every palate.

PALMS AS DECORATIVE PLANTS.—The employment of palms for the decoration of large rooms, corridors, halls, and windows, is not by any means as general as it ought to be in this country, considering how easy is the culture of many of the species. Size need not form an obstacle, as there are many of comparatively small proportions; nor is a high temperature necessary in all cases. With a view of calling attention to their use as ornamental plants for the localities indicated, we extract, from an article of M. Burel in the "Horticulteur Français," the following list of suitable species:—

1. LEAVES FAN-SHAPED.—*Chamærops excelsa*.—The habit is somewhat stiff in youth. It is very hardy, bears cold without inconvenience, and may be grown for a long time in rooms without injury.

Chamærops humilis.—This species does not bear the cold so well as the preceding; but it does well in ordinary temperatures; and its habit is graceful, especially when grown as a stove-plant.

Chamærops Martiana.—Not so common as, and more tender than, the preceding.

Chamærops stauracantha.—This species demands a constant high temperature and free exposure to light. It is impatient of cold.

Rhapis flabelliformis.—Very well adapted for culture in rooms if kept away from chimneys and hot draughts, and placed close to the light.

Rhapis humilis.—Rather scarce. The same remarks apply as to the foregoing.

Corypha Australis.—A fine palm when once it has got into growth. It does well in rooms at the ordinary temperature if kept away from cold draught.

Corypha rotundifolia, *Jenkinsii*, *Mauritiana*.—These rather rare species require, in order to grow them well, a warmer temperature than does *C. Australis*, and also free exposure to light.

Latania borbonica.—A magnificent palm, generally grown, but which requires considerable heat. Its leaves should be frequently syringed or washed, and the plant should get as much light as possible.

Latania rubra.—A beautiful species, but one that requires a situation where the temperature is kept high. It is not much employed.

Sabal umbraculifera.—Less elegant than the latanias, but hardier.

Sabal palmetto.—An excellent species, which does well in apartments.

Sabal Adansonii.—Will do well for a considerable time at the ordinary temperature of apartments.

Thrinax argentea.—A very elegant palm, which does well for culture in rooms; but it is rare.

Thrinax elegans.—A charming plant, with elegant and graceful habit. It is much employed to decorate vases in saloons by reason of its small size. It prefers a sustained high temperature. All the species of thrinax are excellent palms, which may be grown for a long time with care and with the necessary heat; but they are not common in the trade.

2. LEAVES PINNATE.—*Phoenix dactylifera*, *sylvestris*, *reclinata*.—These palms with elegant foliage are very hardy. They may be grown for a long time

in saloons at the ordinary temperature. They are not very sensitive to cold, but are difficult to keep clean.

Fulchironia senegalensis. — An excellent plant, especially for large and tall or raised vases, by reason of its spreading leaves. This palm has also the bad quality of retaining the dust on its leaflets; but, on the other hand, it is very hardy, but little sensitive to cold, and does well if freely supplied with water.

Areca sapida. — A fine plant, dear and scarce. It does not require much heat, but demands plenty of light.

Areca rubra requires a continuous high temperature, and is impatient of cold draughts and excess of moisture.

Areca lutescens requires the same temperature as the preceding, but is less tender. All the arecas require warm localities, free from draughts of cold air. They must not, therefore, be placed on balconies, with the view of exposing them to the fresh air, when the external temperature is not higher than 8-10° Cent.

Jubcea spectabilis. — A very strong-growing (*solide*) palm, but scarce.

Chamadorea Ernesti-Augusti, elatior. — These palms do well in a room with ordinary heat. They can, however, only be employed in the young state, as they soon lose their lower leaves.

Seaforthia elegans. — Large and beautiful plant, which does well in well-lighted rooms with sufficient heat. The same remarks apply to *S. Dicksoni* and *S. robusta*, which are rare in cultivation.

Cocos Australis, comosa, coronata, flexuosa, &c. — Large palms, with elegant and slender foliage; very useful for grouping in masses against walls or by the sides of mirrors. Ordinary temperature suffices for them.

Attalea spectabilis, speciosa. — Very handsome palms, but scarce. They require a high temperature.

Caryota urens, Cumingii, &c. — These palms are fit for the decoration of halls; but, to preserve them, a continuous high temperature is required. They have not the majestic appearance of some other palms. Their leaves appear as if gnawed by insects. They would only be useful in decorations on a large scale, and by way of contrast.

Ceroxylon niveum, andicola. — Bold foliage, but not very elegant! Plants of moderate duration, requiring considerable heat. Rare and dear.

Geonoma magnifica, Verschaffeltii, Ghiesbreghtii, Porteana, &c. — The geonomas, though hardy enough in the ordinary temperature of saloons, are not in much request, by reason of their entire and not very elegant foliage.

Calamus. — Pretty palms, but rare and high-priced. They require a continuous high temperature.

Damnonorops melanochetes. — A charming little palm, requiring considerable heat; dear and scarce.

Elæis guineensis. — This palm, very suitable for vases, requires a warm temperature, and exemption from cold draughts.

Trithrinax Mauritiformis. — This little palm is suitable for vases in saloons, but requires a continuous heat. — *English Journal of Horticulture*.

THE RASPBERRY IN QUEBEC. — *To the Editor of "THE CANADA FARMER."*
Sir, — Several communications I have lately seen respecting the alleged want of hardiness in the raspberry, induce me, with your permission, to venture a few words of encouragement to any who may be hesitating as to the possibility of their cultivating in Canada the finer varieties of this delicious fruit. To such, then, I would say, It is not because you are located far to the north that you will not succeed : on the contrary, living near the city of Quebec, I never fail to have a most beautiful crop. Last winter was the most severe experienced here for many years ; the thermometer sinking to 37° below zero, and remaining near about there for days together. It has been followed by a most scorchingly hot, dry summer ; yet my bushes are fairly loaded down with large and delicious fruit, and not of the common kinds, but of the so-called tender Antwerps. From my experience with this berry, I have thought that it cannot be merely the cold which injures them, but, possibly, rather the alternate freezing and thawing which they are exposed to in milder countries. I have cultivated here Yellow Antwerps for the last fifteen years without experiencing any difficulty ; and six years ago, wishing to try other varieties, I procured a few bushes of Red Antwerp, Franconia, Fastolff, and Victoria. They have all flourished ; but the Red Antwerps produce so much the best and largest fruit, that to me the others are valueless.

My mode of cultivation is simply this : About the middle of September, select a spot where a goodly supply of snow is sure to lodge early in the fall (no difficult matter here) ; manure the ground heavily by digging in decayed stable-manure ; plant in rows about three feet apart, plants about eighteen inches asunder in the row ; and, shortly before the first fall of snow, throw over them any refuse straw or branches. We find potato-stalks and spruce-broughs excellent. These will gradually bend the plants towards the ground ; the weight of the snow will assist ; and, in the spring, they will come out ready to send a leaf from every bud. I had omitted to say, that, after planting, I shorten the canes to within less than a foot of the ground. Succeeding springs, I merely take off a few inches from the tops. The Red Antwerps, with me, average from five to six feet high. We train them to horizontal strips of board, placed between each second row, on stakes about three feet high, bringing two rows to meet to one board, and leaving thus an alley between each second row. I find it essential to tie them up in this way. as, if not done, the weight of the fruit brings them flat to the earth, soiling and spoiling the berries. We top-dress well with decayed stable-manure and ashes every spring, and again as soon as the fruit is gathered. Treated this way, a very small patch will supply a very large family, and will last without replanting or changing the location for an indefinite number of years. Even without any covering except the snow, very good crops can generally be had ; but a few branches or potato-stalks cost very little trouble, and insure a large yield, and, by bringing the canes evenly and gradually to the ground, prevent their being broken.

As I said, I have yet found no variety to equal the Red Antwerp : but Mr. Beadle's letter, in your last number, has given me an inclination to try what could be done here with the Hornet ; for, so far, I have had no necessity to look

for the *hadiest*, but simply for the *best* and *largest* raspberry. As to productiveness, they all produce about as many berries as you could by any possibility stick on the bushes. — *F. W. A., in Canada Farmer.*

QUEBEC, Aug. 6, 1868.

MATTHIOLA BICORNIS. — The history and origin of this plant are simple enough. It is a Greek plant, and was introduced from Athens some few years ago. As a fragrant vespertine plant, it is of some interest. I can hardly agree that "it is beyond the praise lavished on it," which we thought excessive. Seeds of this were received by us from Greece five or six years ago. After growing the plant, and proving its great worth, we distributed seeds in the usual way; and the very large demand for it, both at home and abroad, has proved how welcome a plant of such unusual sweetness has been. It may not be uninteresting to state that we have also grown for two or three years its congener, *M. tricuspidata*, of which we have this season a beautiful display. Although the fragrance of this is rather less powerful than that of *M. bicornis*, the plant is not less pleasing, and is more valuable on account of its not being simply a night-blooming stock, the sweetness remaining throughout the day. The cause of this may probably be owing to the stout, broad-petaled flowers remaining fully expanded. These are in themselves very beautiful, and make a fine display in a bed or border. The color is lilac, or lilac-purple, with a white eye or centre. The habit is free, but dense, with a vigorous growth. The plants flower abundantly, and remain in perfection far into autumn. Both it and *M. bicornis* are treated by us as hardy annuals. — *Gardener's Chronicle.*

(GOLDEN CHAMPION GRAPE. — This in all respects extraordinary grape was raised by Mr. Thomson, gardener to his Grace the Duke of Buccleuch, at Dalkeith Palace. "It was," Mr. Thomson states, "raised about five years ago from a seed taken from a grape that was a cross between the Champion Hamburg and the Bowood Muscat." The bunches are large, of a slightly-tapering form, and heavily shouldered. The stalk of the bunch is stout and fleshy; that of the berry, stout and warted. The berries are extra large, obovate or ovate, slightly pointed, — in some instances, almost round; the flesh is firm, yet remarkably juicy and tender; the flavor rich, somewhat of the character of the best-ripened Black Hamburgs.

The plant is remarkably free and robust in growth, and very prolific; requiring exactly the same sort of treatment as the Black Hamburg. The leaves most nearly resemble those of the Muscat: they are slightly lobed, and very deeply and sharply serrated; and the leaf-stalks have a reddish tinge.

This is indeed a noble grape, and one which will take the highest rank among white varieties. It supplies a desideratum which has long been felt; viz., the possession of a white grape of easy culture like the Black Hamburg, which latter is, *par excellence*, the very best-constituted grape in cultivation, the gardener's sure and trusty friend. The berries of this new acquisition are of the very largest size, resembling in that respect huge Canon-hall Muscats; while the bunches are as large as those of the best variety of Hamburg, the Victoria, or Frankenthal. — *Gardener's Magazine.*

HORTICULTURAL NOMENCLATURE. — “What’s in a name?” is a question that has often been raised, and doubtless as often settled, — at least to the satisfaction of the questioner. Now, whether taken from the political, literary, social, or commercial point of view, there is, we apprehend, much in a name; and, if we descend from the general to the particular, we fancy, that, from a horticultural point of view, it is not a matter of indifference. True it is that our greatest poet has said, —

“A rose by any other name would smell as sweet;”

but we take leave to doubt whether it would always seem as fair. We have observed that certain names at once take hold of the public, are in every one’s mouth, and make the novelty popular from the beginning: whereas, in other instances, the reverse of this is the case; the high qualities of the novelty require knowing to make the name popular.

If we look back on the past, or take the existing nomenclature of plants, we find much that is incongruous and in bad taste. Botanists and horticulturists have alike erred here. The former have transgressed by adopting a frightful terminology, by compounding words of different languages, and by applying words which do not correctly interpret facts. As an instance of the latter, the word “*coccinea*” (scarlet) is often applied to things crimson; “*cœrulea*” (blue), to purple; and “*alba*” (white), to things which would hardly pass as such in the murky atmosphere of the sootiest towns. The horticulturist, even of our own time, too often gives the reins to fancy; and, after reading some of our plant-catalogues, one would almost think that the days of bright blue roses and luscious out-of-door grapes had at length arrived. It may be pleasant enough, and sometimes temporarily profitable, to give the reins to fancy, when the practice not only amuses the mind, but at the same time fills the pockets of the performer. But there is a large and increasing class of amateur-gardeners in the community, matter-of-fact people, to whom this method of proceeding is obnoxious. There is delusion in it. The purchaser acts, hopes, realizes, and is disappointed. The object has not fairly answered to the character given of it. We do not accuse the giver of these highly-colored names of wilful exaggeration. The culture of flowers is not exactly that matter-of-fact occupation which some would represent it to be. There is poetry in it, and the ruddy glow of imagination will often unconsciously tinge the objects over which it delights to hover; but, if *the names* are applied with a poet’s license, *the descriptions* should at least be precise, definite, and truthful. If horticulture is to become a science to the few, and remain a source of recreation to the many, its votaries must remember, that even in poetry, and certainly in actual life, the imagination must be restrained within due bounds, or the result will be neither intelligible nor satisfactory.

But these are not the only points on which reform is needed in the nomenclature of plants and flowers. Where is the cultivator who would not rejoice to see the long French names of roses and other plants reduced to a state in which they might be spelt, pronounced, and understood by all? Could not the nursery-man into whose hands these novelties first pass translate such names as are trans-

latable, and re-christen others? for many of such names are at present a mere jumble of unintelligible sounds to those who are the oftenest called on to repeat them. To prevent confusion, this work might be delegated to some tribunal whose authority would by common consent be acknowledged and followed. We once knew an ingenious laborer who remembered the name of the rose "Je me maintiendrai;" by assimilating it with the words "Jemmy maintain me;" and we have heard more than one philosophic nursery-man mourn over the loss of time incurred in writing "Souvenir de la Reine d'Angleterre," five hundred times repeated, when "Ajax" or "Ino" would have answered every purpose.

Further: something may be said on the fitness of names. A flower that would well become the name of "Blushing Bride" would make a very indifferent "Alderman;" nor should we expect to see exactly the same complexion in a "Vulcan" as in a "Venus." A large gooseberry might appropriately bear the name of "Achilles," which would be far more euphonious and agreeable to ears polite than such names as "Bang-up" and "Thumper," which exist plentifully among this class of fruit. In this, however, as in other instances, we would not advocate a change of names already established,—they are short and easy enough, if homely or provincial,—but that future names be chosen from a more refined vocabulary.

Finally: we have seen it somewhere suggested, and think the suggestion a good one, that newly-introduced species, the botanist's plants, should bear names coined from the Latin or Greek languages, expressive of some prominent feature; and the horticulturist's plants, what we are used to regard as mere variations of species, should have applied to them popular names in our own language. The names of the good and great ones of our own time, and of all time, offer for this purpose a rich repertory, from which we might freely draw.

These suggestive remarks are thrown out with all good humor for the consideration of those into whose hands the naming of our plants and flowers usually falls. There are many cries for reform just now; and, among small things, it is nowhere more needed than in our horticultural nomenclature.—*Florist and Pomologist.*

DIGGING UP HORSERADISH.—Few operations in the kitchen-garden are more slovenly performed than the above. As a rule, search is made for the best stick; then up it comes, no matter whether it be in the middle of the plot or not. It follows that a portion of the stick is left in the ground: this, instead of pushing forth one good stick, will send forth a branch of three or four spindly sticks. All this can be avoided by a little extra trouble. Commence at once at the beginning of the bed, and dig out a trench; and store away all the sticks you dig up, to be used during severe weather. Let there be a blank space remaining between the bed and newly-dug ground, so that, when a further supply is required, the operations of trenching can be repeated. Now, if the crowns of those sticks which are dug up are cut off about an inch in length, and dropped in holes about fifteen inches in depth, and at equal distances, you may hope to have good horseradish.

EPIPHYTES. — The writer of the article "Florida Air-Plant," in the December number of this Journal, misunderstands, as well as the doctor his informant, the true character of the *Tillandsias* that he met with in Florida, they both calling them air-plants; very properly rejecting the term "parasite," but at the same time forgetting the term "epiphyte." The term "epiphyte" is applicable to a large class of plants (principally orchids) that derives its support mainly from the atmosphere. The term "parasite" is applied to a class of plants that derives its support entirely from the tree in which it has taken up its abode: a well-known illustration is the mistletoe. The air-plant proper is the genus *Aerides*, named after *ær*, "the air;" although I do not see with what propriety its discoverer could have given it this name, — a name as applicable to hundreds of other plants as to this. It is a well-known fact to every practical gardener who is at all versed in plant-culture, that any and every epiphyte (for convenience' sake, taking any or all of the epiphytal orchids as an illustration) absorbs enough matter from the atmosphere (either in the orchid-house or in its own native habitat), with their thick fleshy roots, to support them, without their being benefited to any appreciable extent from the trees, blocks, or rough-bark, as the case may be, to which they are attached. The writer of the article in question predicts that ere long the *Tillandsias* will be well known and prized. I will assure him that they have been well known in English gardens this long time. Some of the varieties (there being about forty varieties, of a variety of colors; viz., white, pink, blue, yellow, scarlet, purple, rose, &c.) are very interesting. The large growing varieties will succeed admirably with the same treatment that is given to pine-apples: the smaller varieties will do well fastened on blocks of wood, and treated as the majority of other epiphytal plants are. *I. C.*

ROCHESTER, N.Y.

SOWING ROSE-SEED. — The heps should be gathered when ripe, early in November, and kept entire in a flower-pot filled with sand. At the end of February, or beginning of March, they must be broken with the fingers, and the seeds sown in pans, which should be deep, — not less than eight inches in depth. They ought to be well drained, and filled to within half an inch of the rim with two-thirds loam from turf, and one-third sandy peat or leaf-mould, adding sand if the soil does not contain enough. The seeds should be placed rather thinly, and covered with half an inch of fine soil. The pans should have a good watering, and be plunged in the open ground, in a sheltered but open situation. They must be protected from mice by a covering of very small-meshed wire-netting, which will also keep the soil moist from the shade afforded, space being allowed between the soil and wire for the plants to come up: three-quarters of an inch will be sufficient. The soil should be kept moist. The plants will appear in May, or earlier; and, when they have three or four leaves, they may be taken up and potted in small pots, be placed under a hand-glass for a few days, planted out in good rich soil, and they will then make strong shoots fit for budding in August or September. Very often the seed does not vegetate until the second spring: the pans, therefore, should be allowed to remain until May or June of the second year.

HINTS ON TRANSPLANTING SHRUBS.—In transplanting shrubs as well as very small trees, a common error is to place them too deep in the earth. This has arisen from the circumstance, that, by receiving more moisture, they often succeed better the first summer, at the expense, however, of their subsequent healthy growth. It is much better to plant shallow, imparting the necessary moisture by means of a deep mellow soil beneath, and by mulching above. The material for the latter may be short litter, manure, old tan, or leaf-mould. A surface consisting of these materials, raised to the height of a few inches, will occasion no injury whatever for a year or two, and will admirably equalize the moisture of the soil. Manure used in this way operates beneficially, not only in preserving moisture, but also in increasing fertility; the properties of the manure being carried down in solution by rains, especially if applied in autumn or winter.

The contrast between the hard and baked surface too often witnessed when the ground is left bare, and the moist and softened earth beneath a coat of manure or litter, can be only fully understood by means of actual observation. Its advantages were strikingly exemplified during the past hot summer. Young trees and shrubs that were protected from drought by a coating of litter and manure have not suffered in the least, while those not protected are perishing. Staking may be in some instances necessary to prevent wind-swaying, or a one-sided growth, where there are imperfect or unequal roots; but usually, if the shrub is furnished with good roots, and if care is taken while the earth is shovelled in to spread them all out like the rays of an umbrella, they will serve to brace it evenly, and prevent a one-sided growth. Fixing by water, as it is termed, is often sufficient alone to preclude the necessity of staking.

Planting is most conveniently done by three persons; one spreading out the roots with his hands, and a second placing in the soil, while the third settles it by pouring water from the rose of a water-pot. Although soft at first, the soil in a few hours dries, and hardens sufficiently to hold the newly-set roots firmly. In transplanting roses and some other small shrubs, sufficient pruning of the top is rarely given. Climbing-roses, and those, generally, which throw up rapid and vigorous shoots, will make a better growth by autumn if cut down to a few good buds when planted out than if long portions of stem and branches are left: these, indeed, not unfrequently draw so hard upon the roots as to cause the death of the plant. On the other hand, I have seen shrubs transplanted in wet weather with entire success, after having grown six inches, by taking up all the roots carefully, and drenching the soil well with water, at the same time very freely shortening back the shoots. — *Florist and Pomologist.*



THE Editors of "Tilton's Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

A CORRESPONDENT inquires our opinion of washing plum-trees with coal-tar-water as a remedy for the curculio. — Only experiment can answer this question, and we do not know that it has ever been made. But it is well known that carbolic acid is very destructive to all insect-life, and we think it probable that the tar-water may contain enough of this acid to be efficacious against the curculio; but we would recommend showering the whole tree rather than washing the trunk.

G. F. — Several of my large pear-trees annually send up numerous small shoots or suckers. Please give the best time and method for their removal. — The only way to exterminate suckers thoroughly is to remove the earth, and cut them off smoothly, close to the root. If cut at the surface of the ground, the probability is, that two will spring up for every one cut off; and, where this process had been many times repeated, we have seen a bunch of suckers produced as large as a man's arm, all joining in a single stem at the bottom. A sharp spade or chisel will be found handy in cutting up such ones. If there are only a few, they may be removed at any season; but if a large quantity of earth must be removed, so as to uncover the roots, it should be done in spring or autumn, when the trees are dormant. There is, however, now and then, a tree which seems to have an incurable propensity to send up suckers (we have known some, which, when dug up, had almost filled the ground with a solid mass of suckers), and for such the only remedy is the brush-heap and a new tree. But an ounce of prevention is worth a pound of cure; and we advise all fruit-growers to take care not to wound the roots of their trees, so as to excite them to send up suckers.

MR. EDITOR, — We see in your letter-box of December a statement in regard to an apple-tree, one of whose branches had been completely stripped of its bark for a space of about four inches, yet continued "to live and grow" for several years; and it is asked, Why? Now, permit me to say, I see no reason why it should *not* do so, under certain conditions. The sap of apple-trees (as of all mature exogenous plants) ascends through the young wood (which, as the name *ex* implies, is the outside wood, or that nearest the bark). It thus reaches the buds and leaves, causing their development. After having been digested in the leaves (which are both lungs and stomach to plants), it returns through the inner bark, depositing, as it goes, an additional layer of new wood upon the outside of that of last year's growth. That is the way in which wood is made. That is why trees die when stripped of their bark. They cannot make any more new wood. The wood once new soon grows old and hard by means of matter deposited from the sap. The sap can no longer rise; for it has no channels to pass through. Stripped of its bark, exposure to the atmosphere, with its drying effects, hastens this process very much; and the wood becomes not only old, but *dead* on the surface.

Now, I can imagine a growth previous to the accident in question so vigorous as to supply an amount or thickness of young white wood in question sufficient to stand the strain of these forces for several years; thus allowing sap from the parent-tree to pass up to its buds and leaves, developing them, and producing an even unnaturally large growth of wood above the injured part: but I venture to say, there was no growth at or below that. The descending sap arrested by the wound must enlarge the branch greatly so long as it lives at all; but die it *must*, and that at no very distant period. Here permit me to say, that when a branch, or even the whole trunk of a tree, has been *very recently* girdled, a liberal poultice of fresh cow-droppings applied to the entire denuded surface, and bound on with a cloth, is an almost certain cure. Yours, S. C. Harris.

C. B., Hanover, N.H. — *Cantua dependens*, like all the species, requires an airy greenhouse, and very much the treatment given to a fuchsia. It is a very pretty shrub, native of Peru. The trouble with your plant probably is, that you keep it too hot, and the air is too dry.

You will find the plant figured in "Flore des Serres," vol. vii. pl. 650.

Editor of "Journal of Horticulture:" —

PERHAPS I can answer the inquiries of "J. H. B." in your last number, about the Mexican Everbearing Strawberry. In August last, one of my neighbors asked my opinion about the Mexican Maximilian Prolific Strawberry. (I am not sure that I have given the *whole* name.) He said a man was in town taking orders for them at three dollars per dozen. He also showed me a handbill, with a cut representing the strawberry in fruit. After looking at it, I told him it was nothing more than the Red Alpine, which had been known for hundreds of years; and could be had of respectable nursery-men at twenty-five cents per dozen. In a day or two, the agent called on me to get an order; and, when I told him what I knew about it, he owned up that it was called Alpine by *some persons*. Probably, the gentleman is on his travels, and has *now* reached Indiana. Another correspondent asks you about the three-thorned acacia as a "timber tree." This tree is not uncommon in our forests, and grows to a good size. I have seen sets of beautiful chamber-furniture made of it, by one of the cabinet-makers in this city. U.

ADRIAN, MICH., April, 1869.

B. F. BEEBE, Troy, Penn. — This correspondent states that he has had a large experience in the cultivation of tomatoes, and that he considers Maupay's Superior much the best for the general crop. In quality and quantity he thinks it is surpassed by none. The Tilden proves earlier with him than any other, not excepting the Keyes; besides being much more productive than the last named. He asks if the Gen. Grant and the Maupay are identical? Judging from the cut accompanying the seed sent him, he thinks the Maupay might have sat for the photograph.

We have cultivated to some extent the different sorts referred to in the above communication, and consider the Maupay and Gen. Grant distinct varieties. Both are very productive: the fruit is of fine color, contains but few seeds, and is remarkable for its extreme solidity; but we think the Gen. Grant is the better keeper, bears transportation better, and is altogether to be preferred for cultivation for the market. In a trial growth of all the recent kinds known to us, we pronounced these two sorts, every thing considered, to be decidedly the best now before the public. There are those which are recommended as being earlier, and perhaps really are so; but they are more seedy and hollow-hearted, and are no more productive. It is possible, however, that, among the numerous new varieties introduced this season, even the Gen. Grant and Maupay may find a rival; if so, we shall be happy to acknowledge the acquisition. For those who may desire additional kinds, we recommend the Boston Market, Cook's Favorite, and, if it can be procured unmixed, the old Perfected.

A. H. S., Springfield, Mass. — The three best crocuses for a ribbon-border are Duchess d'Angoulême, white, large yellow, and Prince Albert, blue ; or Caroline Chisholm white, Othello purple and large yellow.

Cloth-of-Gold is not suitable, as it blooms too early, and Cloth-of-Silver blooms too late.

IDEM. — Cannas and colocasia should at once be started in frames, but should not be planted out until all danger of chill nights is over. *Canna discolor* is one of the best for effect. *C. nigricans* is a good dark kind. *C. limbata* and *gigantea* are free growers. *C. Nepalensis* has glaucous foliage and showy flowers, almost as fine as an *Hedychium*. In fact, all the cannas are useful and effective.

NOVICE. — The prettiest hedge you can plant is the Japan Quince, *Pyrus* or *Cydonia Japonica*. When in bloom, it is very showy, and grows very thick and strong. It takes many years, however, to form a tall hedge, as the plant grows somewhat slowly until well established.

SPRING, Syracuse, N.Y. — *Jeffersonia diphylla* is a very pretty plant with white flowers, which bloom about the time of the bloodroot, which they much resemble. It is perfectly hardy, and has elegant foliage and curious seed-vessels.

A. L. M., Boston. — Sow mignonette and larkspur as soon as you please ; both should be sown where they are to remain, as they do not transplant well.

A. L. M., Idem. — Of the grape hyacinth there are several species : the light-blue one which you describe is botanically *Muscari racemosa*. Of this there is a white and a pearl colored variety : both bloom early, often by the 10th of April. The true grape hyacinth, however, is a later bloomer, and is *Muscari botryoides*.

PLYMOUTH. — *Epigaea repens*, the Mayflower, is often called the trailing arbutus. It is not an arbutus ; but both belong to the same family, *Ericaceæ*. The name is derived from the Greek *epi*, "upon," and *gaia*, "the earth," and is peculiarly appropriate. The common idea that the plant cannot be cultivated is nonsense : give it a sandy peat soil, not very dry nor yet very wet, and it will grow and increase.

Catalogues give us another species, *E. rubicunda* ; but it is only a variety with larger and deeper-colored flowers.

"TYRO IN DESPAIR." — We sympathize. The past winter has been very severe on evergreens ; arborvitæ-hedges have been badly cut up ; rhododendrons have suffered far more than during the winter of 1867-68 ; we know of plants which have stood unprotected for fifteen years which have been either killed or much injured during the past winter. The reason we cannot yet give you : we are studying up the facts, but are free to say they seem so contradictory, we are at a loss. We hope soon to give our experience ; but it is yet too early (April 26) to tell what the injury really is.

P. B., Mass., wishes to know how he can best protect his grape-vines from the attacks of the rose-chaffer, which annually appears in great numbers, consuming the blossoms, and disfiguring the foliage. — The only reliable means yet known for destroying the rose-chaffer, or rose-bug, is to gather them day after day, by hand, or by brushing them into vessels of water, and by shaking or beating them from the trees into sheets spread underneath, and then crushing, burning, or scalding them. But it requires the combined efforts of many persons, when a district is overrun, to rid it of the pests.

We have never been troubled by rose-bugs but once, when they appeared in great numbers on a lot of young cherry-trees in the nursery. We immediately set a boy at work gathering them into a pail with a little water in the bottom. At night, the cold water was poured off, and boiling water poured in. The job was completed in four days, about a peck of insects having been collected; and we have never been troubled with rose-bugs since.

B. F. wishes information with regard to the difference in the hardiness of the popular varieties of the peach, and desires us to give the names of two or three sorts best suited for cultivation in the interior of New England. — We recommend Cooledge's Favorite, Crawford's Early, and Oldmixon Free. Red-cheek Melacoton and Kenrick's Heath may be added; but the latter, though very hardy, is only of second quality. It is entirely distinct from the Heath Cling. George IV. is hardy and of delicious quality. The true Early York is very early and very fine, but somewhat tender. It has serrated leaves; and most of that class are tender, the old Early Ann, Fay's Early Ann, and Early Sweetwater so much so, that they have been dropped from cultivation. Seedling peach-trees will often give a crop when all others fail; and, if we wished to raise peaches in a northern region, we should endeavor to secure stones from seedling varieties of fine quality, as they would be likely to produce the same. In default of these, we would plant seeds of the best worked varieties, taking care that they were grown on healthy trees. A large proportion of these would probably give fine fruit.

B. inquires, "What are dwarf trees?" — They are trees grafted on a slow-growing stock, which would not attain so large a size as the species grafted on it. Dwarf pears are now grafted only upon quinces; but, formerly, the thorn was used. They are less hardy than upon pear-stocks, and require higher cultivation; and are therefore less adapted for orchard than for garden culture. For the latter, they possess many advantages, the greatest of which is, that they come into bearing much sooner than standards. They also admit a greater variety in a small garden, and, being within easy reach, can be much better controlled and trained than tall standards.

Dwarf apples are grafted upon several species of shrubby apples known as Paradise or Doucin stocks. They frequently produce fruit when not more than two feet high, and are perfectly hardy.

The cherry is dwarfed by grafting on the *Prunus Mahaleb*, and is more hardy than on the Mazzard stock, which is used for standards.

MR. EDITOR, — If you want to do a very great service to horticulture, allow me to suggest especial attention to the best modes of utilizing fruits in all rightful methods.

I am as confident of immense ignorance on this point as I am of the most urgent necessity, if we would not see horticulture suffer a great backset some of these years when a bountiful crop comes in. There ought to be well known and practised a score if not a hundred elegant and nutritious preparations of fruit now undreamed of by the multitude, that should in all our markets add to the variety of fresh and prepared fruits, and, to a certain extent, supersede the wretched pastry, not to mention other abominations like gum, tobacco, &c., now in vogue. With best wishes,

F. K. Phoenix.

BLOOMINGTON, ILL., March 26, 1869.

[We entirely agree with our correspondent as to the necessity of new methods of preserving fruits so as to utilize superabundant crops which would otherwise be wasted; and we trust that those who may make experiments in this direction will communicate the results to us for publication. — Ed.]

I AM much pleased with "The Southern Horticultural Trip" of the Hon. Marshall P. Wilder, in your March number. That venerable gentleman is so practical and observant, that your readers cannot but be highly gratified that you have secured him as an occasional contributor to your valuable Journal. I have for more than forty years been a subscriber to one or more agricultural papers, and always found their weekly or monthly visits a source of much enjoyment. To the citizen, they are always suggestive of innocent and intelligent enjoyment of the country; and to the farmer and permanent resident in the country I consider them indispensable.

I had no intention of saying more at this time than to state a fact in reference to the following quotation from Mr. Wilder's communication: "The pride of the South (*Magnolia grandiflora*) was first seen at Baltimore, Md., and Washington, D.C.; but the injury which some of the trees had received from frost indicated this as the northern limit of this magnificent tree. The same thing was noticed at Louisville, Ky."

I have the pleasure of informing Mr. Wilder, that I have a fine healthy specimen on my grounds, about twenty feet high, two wide-spreading branches, with numerous laterals, starting about six feet from the ground, and the circumference of the trunk at the ground just thirty inches. We have annually a fine display of flowers, and seeds in perfection. I send you a dried pericarp (strobile) to prove the variety. This tree was found carefully labelled, and without charge, in a considerable package of fruit-trees ordered from Messrs. Parsons & Co. of Flushing, in 1845. The euphonious name was given in honor of Pierre Magnol, professor of medicine and botany, who flourished in 1670. Wm. Lawton.

NEW ROCHELLE, March 24, 1869.

[We are very glad to know of the existence of this fine specimen of the *Magnolia grandiflora* so far north, and feel much obliged to our correspondent for the information. Still, we must consider it an exceptional instance; and we think Mr. Wilder is right in the line which he has assigned as its northern limit. — Ed.]

K. R., New Haven. — The grass on your croquet-ground, which you describe as "dying in spots," is killed by the larvæ of the common dor-bug. Your remedy is to dig up the worm and kill him. Sow white clover over the bare spots, and they will soon be green; and in the summer kill every dor-bug you can catch.

ANONYMOUS inquiries we have more than once stated that we cannot answer; but, as we continue to receive them, we repeat it. We shall at all times take pleasure in answering any queries whose writers will give us their names.

DAN. MILLIKEN, Hamilton, O. — I wish to be informed as to the method of propagating the dwarf peach. Would it remain dwarf if worked on a common peach stock? and is that the common method of propagation? — Yes; work on the common peach stock, it will remain dwarf. This is an exceptional case; the dwarf character consists in the remarkably short-jointed wood, which develops numerous fruit-buds like the currant.

Editor of Tilton's "Journal of Horticulture:" —

IN answer to inquiry in last number of the Journal about grafting the persimmon, I can say that it may be done just as you would graft an apple-tree. We have changed two staminate trees of natural growth perfectly, so that they bear regular full crops. It is not necessary to leave any for fertilizers, as they have staminate and pistillate flowers, both on the same tree. *N. L. Wood.*

SMITHFIELD, O., April 20, 1869.

POMEGRANATE MELON. — Can any of the readers of the Journal give any information respecting a variety of the watermelon cultivated many years since in different parts of New England, and known as the "pomegranate"? The fruit was perfectly round, and did not exceed the size of a common orange. The flesh was bright scarlet, very sweet, and the seeds resembled those of the apple. The vines yielded abundantly, and a dish of the melons was a beautiful object. We should feel under great obligations to any one who would supply us with a few seeds, or who could give us any additional particulars.

We have also been informed that a muskmelon of corresponding size and form was common to many gardens. Having scarlet or deep salmon-colored flesh, it must have been distinct from the Queen Anne now in cultivation. Where can seeds be obtained? or has the variety become extinct? *F. B.*

W. L. S., Cambridge, Mass. — Your single snowdrops probably did not *become* double; but you planted the double variety.

Double flowers are produced by the stamens turning to petals. This usually occurs from high cultivation in rich soil. The tendency of double flowers in poor soil is to become single. Double snowdrops are not so common, and are more expensive than single; but we agree with you in thinking them far less desirable.

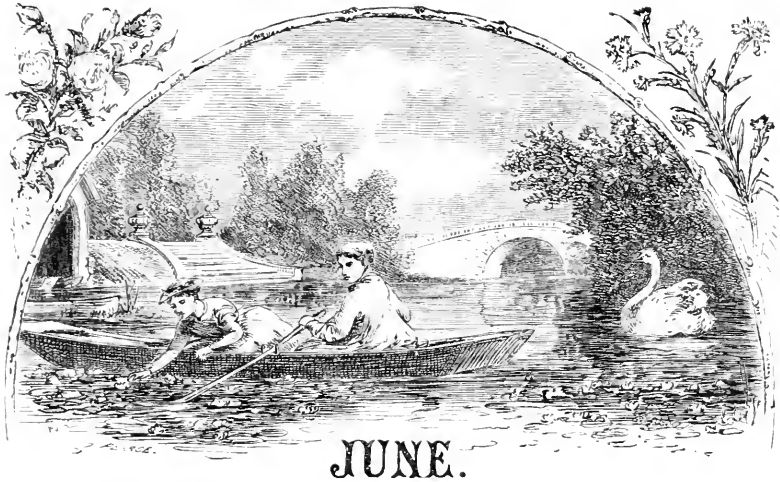
R. wishes us to tell him what hybrid grapes are. — If R. will examine a grape-flower, he will find it consists of the embryo grape surrounded by five stamens, each consisting of a slender filament with an anther at the extremity. These anthers are filled with a fertilizing dust called pollen. To vivify the seed, it is necessary that some of this dust should fall on the pistil, which is situated at the apex of the young grape. Thence it descends to the embryo seed. Now, if we remove the anthers from a grape-blossom, and dust the pistil with pollen from another variety of grape, every seed may be expected to produce a new variety resembling both its parents; and in this way we are enabled to produce a kind combining the desirable qualities of two distinct sorts: and grapes so produced are called hybrids.

I HAVE in my garden a large number of old currant-bushes, which are in a tangled condition, and give only inferior fruit. Is it possible to renovate them? — Old currant-bushes may be much improved by severely pruning early in spring, thinning out the wood, and shortening that retained, taking care to preserve as much as possible of the new wood, which may easily be known by its lighter color. Give a good dressing of manure, and cultivate thoroughly around them. But old bushes can never be made young again; and therefore you should immediately begin a new plantation, and as soon as it bears, destroy the old one.

SHOULD grass ever be allowed to grow among fruit-trees? — Formerly, the invariable principle was, that grass should never be allowed in a fruit-garden; but it is now found that it may be used to advantage, for a time, as a means of checking excessive vigor; and that blackberries and other plants, which, in rich cultivated soil make a rank growth, and are subject to be winter-killed, when in grass, ripen their wood so as to pass safely through the winter.

G. R. — Do you advise training currants in tree-form, or allowing the suckers to grow and form bushes, as is recommended by some? — If you want large and handsome fruit, and neat plants and grounds, you must train your currants to single stems. Undoubtedly, a currant-bush will last longer when continually renewed by suckers; and possibly it may bear a larger quantity of fruit, but it will be of inferior quality: and proper pruning and cultivation is impossible in a mass of close-growing branches such as an old bush forms. So we say, Make currant trees rather than bushes, even if you have to renew your plantation oftener.

I. C., Chelsea. — *Spiraea grandiflora* is the same as *Exochorda grandiflora*. It is a charming shrub, perfectly hardy, but not very common. The large white flowers are particularly elegant.



HARDINESS IN PEARS.

By PARKER EARLE, South Pass, Ill.

HARDINESS of tree is everywhere indispensable to success in fruit-growing. It is probable that fewer varieties, especially of pear-trees, are entirely hardy in the Mississippi Valley than in New York and New England; for climate and soil combine here to test varieties more severely than in most portions of the country. Our rich soil and warm autumns tend to late growths, and we are liable to sudden and extreme depressions of temperature which the seaboard States several degrees farther north rarely or never experience. Many varieties of pears are, in consequence, faulty here, which bear a good reputation in New England. This is, in many cases, due to their defoliation in summer, and second growth, in September and October, of wood so immature as to require the most gentle descent to the cold of winter to escape fatal injury.

My experience with pears the past season has impressed me with the importance of greater caution than has been usual with us in selecting varieties for the orchard. On the 11th of December last, the mercury went

down to ten degrees below zero at this place. This was a lower point than had been reached at any time in winter for eight years, at least with one exception; and this terrible close of an autumn quite favorable to late wood-growth tried most severely the hardiness of all young, fast-growing trees. The result in my own orchard, among a hundred and fifty varieties, all young trees, shows about forty kinds which seem perfectly hardy; nearly an equal number so tender as to be killed outright, or fatally damaged; while the balance exhibit various degrees of injury, but promise to recover.

Thinking that lists of these classes may be indications of some value to other planters, I herewith give the results, with some of the more important varieties. These trees had mostly been three years planted, in good clay loam without any manure, and had been well but not excessively cultivated. Among those which successfully endured this trial were Tyson, Ott, Belle Lucrative, Howell, Kingsessing, Clapp's Favorite, Moyamensing, Doyenné Boussock, White Doyenné, Onondaga, Stevens's Genesee, Lodge, Parsonage, Merriam, Heathcote, Flemish Beauty, Urbaniste, Beurré d'Anjou, Sheldon, Dix, Duchesse d'Angoulême, Lawrence, McLaughlin, Glout Morceau, Vicar, and Easter Beurré.

Of those badly injured I will name Doyenné d'Été, Golden Beurré, Julienne, Seckel, Beurré Bosc, Paradise d'Automne, Marie Louise, Forelle, Baronne de Mello, Canandaigua, Zoar Beauty, Jaminette, Chaptal, Catillac, Beurré Clairgeau, and Winter Nelis.

Between the last two classes, I find the following important kinds: Bartlett, Brandywine, Ananas d'Été, Beurré Giffard, Bloodgood, Osband's Summer, Kirtland, Beurré Superfin, Buffum, Louise Bonne of Jersey, Napoleon, Beurré Langelier, Beurré Gris, Columbia, Epine Dumas, Josephine de Malines, and Dana's Hovey. I am aware that some varieties named above as tender, or badly injured, were not seriously damaged at other points in this neighborhood, where they had not been much cultivated, or were in bearing, or from any cause had made very little growth the previous season; but I think planters will be wise to rely mainly upon kinds which endure our climate under the most trying conditions.

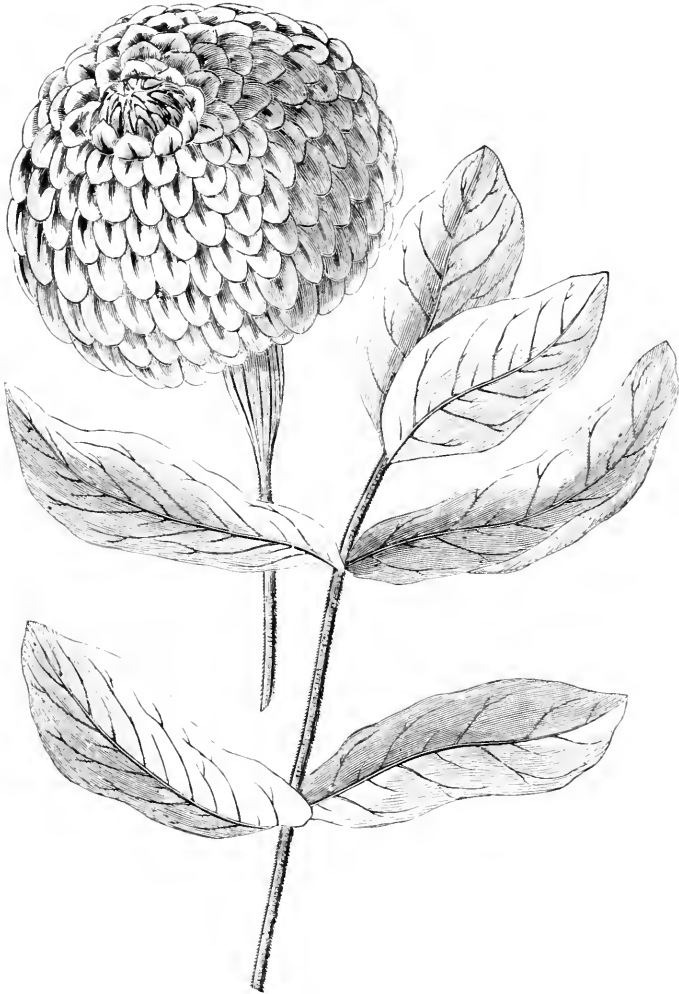
THE ZINNIA FAMILY : THEIR HISTORY AND CHARACTER.

By JOSEPH BRECK, Ex-President of the Massachusetts Horticultural Society.

LOUDON informs us, that this old denizen of the flower-garden was named after Godfrey Zinn, who published in 1757 a Catalogue of Plants of the Garden of Gottingen, &c. It is placed in the Linnæan system in the class *syngnesia* (in allusion to the peculiar union of the anthers), and in the order *superflua*. This order is characterized by producing two kinds of florets in the same common calyx ; those in the ray styliferous only, and those in the disk tubular and perfect. The species are showy ornaments to the flower-garden ; chiefly annuals, originally from Mexico and some parts of North America. They have a look like the marigold, with an imbricated, round-scaled calyx, and five or more remarkably persisting broad rays. The receptacle is chaffy, and the pappus consists of two awns. Besides these, now well known in every garden, three or four beautiful species (some of them perennial), not yet published, have been discovered near the Rocky Mountains.

In one of these the flowers are yellow, so says Nuttall ; but the perennial species have not yet been introduced, to my knowledge. *Zinnia multiflora*, or many-flowered, was introduced into England in 1770, from some part of North America. I became acquainted with this species seventy years ago in my mother's flower-garden, where it was commonly seen in company with the old-fashioned marigold. The flowers are of a persisting character. The rays are a dull red, turning to a faded brown, and so continue ; while the disk, which at first is flat, projects as the florets successively bloom, until it forms a cone, when it presents an unsightly appearance. This species has long since been discarded from the flower-garden. *Zinnia pauciflora*, or few-flowered, was introduced from Peru in 1753, and has a great resemblance to *Z. multiflora*, except the small number of flowers, and the color, which is a brownish yellow : this has also gone into exile with its relative. *Zinnia elegans* was introduced from Mexico in 1796, and is a great improvement on the exiled members of the family. The flowers are much larger, and, when they commence blooming, are very ornamental ; but as the florets of the disk begin to form seed, and it assumes the conical

shape, the rays fade, and the disk has a dry and husky appearance, which is characteristic of all the species: the flower is then far from being ornamental.



ZINNIA ELEGANS, DOUBLE.

Zinnia hybrida is of more recent introduction, and was introduced in 1818 from South America: the flowers a brilliant scarlet. From this and *Z. elegans* have been produced all the beautiful colors now well known to

this family, consisting of scarlet, crimson, orange, yellow, purple, and white.

Ten years ago, we did not even dream that a flower so rigid and uncouth in its last stages would ever be so transformed as to take its place among the so-called florist's flowers ; but so it has, showing what can be done by the patience and skill of the lover of flowers.

It is within the last twelve or fifteen years, that a florist in France perceived on zinnia plants, flowers that had doubled their ray petals. The idea was suggested, that, if they had thus overstepped their natural character, there was a probability that a full double flower might be produced. He carefully saved the seed of these plants, and found, in a few years, that what had been a probability was a certainty, and, to his great joy, beheld a perfectly double flower ; and soon found, that, as in the parents, they sported into all their beautiful colors and shades, excepting white.

A box of these novelties was sent from Paris to the London Horticultural Society, on exhibition, without the name. At first they were supposed to be dahlias, being as large and perfect as that flower ; but, upon closer examination, they were surprised to find them to be double zinnias. Soon the seed was in the possession of every florist. No pure double white zinnia has yet been seen in this country ; but it is in existence, and in possession of Messrs. Vilmorin, Andrieux, & Co., florists, of Paris, as I was informed by an agent of that house. They are now accumulating a stock of this seed, so that we shall soon add to our collection of these brilliant colors a pure white zinnia. The double as well as the single flowers lose their perfection and beauty in the last stages of their inflorescence, unless they are very double, and, even then, they indicate the source from which they sprang. They produce but very little perfect seed, which should not be sowed until the last of May ; for if it lie long in the ground when the ground is cold and wet, it will perish, and not vegetate.

The little yellow-birds make sad havoc with this flower when seeding. They will pick the flowers all to pieces to get the seeds, of which they seem to be very fond, and the ground under the plants is often covered with the fragments of the flower : they commit the same ravages on the marigold family ; but who can blame them ?

Zinnia Haageana. — A beautiful species, with smaller and more delicate

flowers than the other varieties, which are of a golden-yellow color ; flushed dark orange ; is well worthy of a place in the garden, being always in bloom. As yet, no double varieties have been produced.

Zinnia tagetiflora fl. pl. — This variety is classed among the novelties of 1869, giving all the colors and shades of *Zinnia elegans hybrida*. The flowers are pompon-shape, and double as asters and chrysanthemums, and of particular beauty.

Zinnia elegans pumila fl. pl. — Another novelty, having the same varieties and brilliant tints and double flowers as the others. It is of great value on account of its dwarf habit, attaining to the height of only a foot to a foot and a half. It is an excellent acquisition for massing or ribbon-borders.

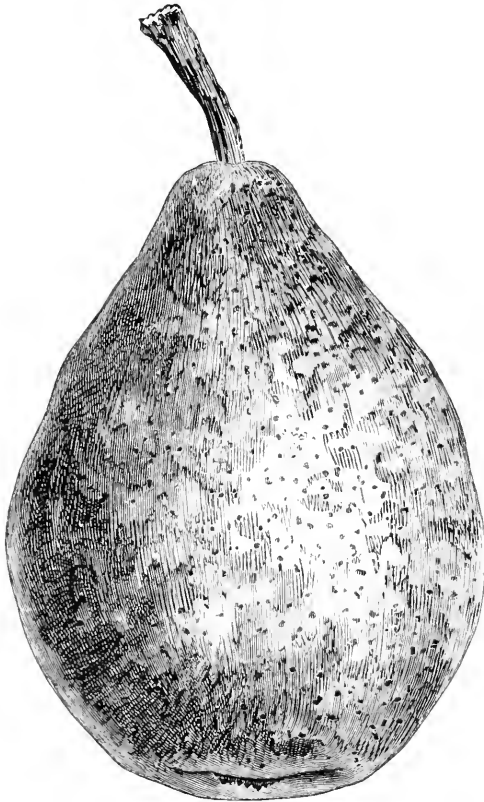
INFLUENCE OF STOCK AND GRAFT.

It was formerly believed that the influence of the stock on the graft was very slight in its effect on the fruit ; but more careful observation shows that it is greater than had been previously suspected ; but further observation is necessary to a final, satisfactory solution of the question. There are some varieties of pears, like the Wilkinson, which it is extremely difficult to graft. The wood of this variety is rarely cylindrical ; the section having a flattened, oval shape. The Delight of Hardenpont (the true or Belgian variety) is another kind which does not readily take the graft. In attempting, some years since, to graft some large Siberian crab trees in the limbs, with russet apples, we found it extremely difficult to procure a union. In these instances, the pith of the tree was far away from the centre, though the section was circular. Then there are certain fruits, such as the Lawrence Pear, which are very difficult to suit with stocks. The injurious effect which some grafts appear to exercise on the stock, in many instances wholly destroying it, is very singular, especially as this effect is produced only when they are grafted into the limbs, and not when a bud is inserted in a young stock in the nursery, though such varieties, being usually not of vigorous growth, do not make large trees under any circumstances.

ÉMILE D'HEYST PEAR.

By MARSHALL P. WILDER, President American Pomological Society.

SIZE large ; form variable, obtuse-pyriform, inclining to turbinate, or frequently to the Calabasse type ; stem variable, from half an inch to an inch or more in length, rather stout, frequently inserted at an angle, and enlarged at the junction, with a fleshy lip on one side ; calyx closed, sometimes set nearly on the apex of the fruit ; basin narrow, irregularly and coarsely



ÉMILE D'HEYST PEAR.

ribbed ; color dull yellowish green, becoming yellow at maturity, clouded a little with russet and brown, thickly dotted, often with a red-marbled cheek, handsome · flesh white, fine grained, very juicy, melting, tender, and buttery ;

flavor sugary, rich, sprightly, refreshing, with delicious aroma ; core small, sound ; seeds long, narrow, acutely pointed, light brown, plump ; season, November to middle of December ; keeps sound and good for a long time ; quality best ; tree rambling in growth, unsymmetrical, hardy, prolific, of the Calebasse class, producing its fruit in large clusters, and should be severely thinned.

The Émile d'Heyst was produced from seed, by the late Major Esperen of Belgium, and dedicated to a son of his friend and compeer Dr. Louis E. Berckmans, now of Rome, Ga. Although what is termed a modern variety, it is not new. Still it has not fruited in many collections in the United States, and is now brought to notice again on account of the great excellence of its fruit, and the hardy character of the tree.

PARLOR-PLANTS. — No. IV.

By EDWARD S. RAND, Jun., Boston, Mass.

THE old and well-known wax-plant (*Hoya carnosa*) thrives admirably with window-culture ; although, strictly speaking, the *hoys* are all stove-plants. This species is of comparatively more hardy nature, and some of the best plants of it we have ever seen have been grown in a parlor. We well remember one plant which had been grown for years in a parlor. It was planted in a large tub which stood in the centre of a window, and was trained on a large trellis all around the wood-work, leaving only a small space for unobstructed light in the middle of the window. The whole plant measured from four to five feet in height by three feet in breadth ; was in perfect health ; foliage large, dark, clear green ; and the branches were loaded with clusters of the rich-jewelled flowers, filling the room with their fragrance.

The only culture required is to set the plant in a not very rich soil of loam and peat, with a mixture of broken bricks. Give good drainage, plenty of water when in growth, and very little when at rest ; for, if kept constantly wet, the roots soon perish. Plenty of sun is necessary to cause the plants to bloom freely. Do not cut off the old flower-stems ; for they often bloom the next year.

The great objection to this plant for the parlor is, that its season of bloom is the summer ; but, on large plants, flowers are often produced for six consecutive months : so, if we wish summer-bloom, we can find no better plant. The foliage is ornamental at all seasons. The variety with variegated leaves is a charming plant, and a picture of beauty every month in the year. The other species, some of which are magnificent in growth and flower, cannot be grown successfully as parlor-plants.

An old-fashioned plant, neglected, homely if you please, withal, is the *Pittosporum* ; yet, nevertheless, it has great merit as a house-plant. Neglect it as much as you may, it will flower ; and, although the blossoms are not showy, — being of a dirty white when they first expand, and gradually changing to yellow, — they are very fragrant, and freely produced.

The common species is *P. Tobira* ; but we occasionally meet with *P. japonicum*, which has larger flowers, and very handsome, glossy foliage. All the species (there are about twenty) are suitable for parlor-culture.

They do well in a mixture of peat and loam, and require no care except to be regularly watered and to be kept clean.

Next we have a plant well known and common, but seldom seen in good condition in the parlor. Few of our readers know the capabilities of the Heliotrope, or have an idea of what can be made of it with careful culture.

We see them in eight-inch pots, producing a few clusters of pretty, fragrant flowers.

We should have them in large tubs, trained six feet high, and bearing a hundred trusses of bloom. There must, however, be a day of small things ; and we must begin with a small plant.

The species should be the common *H. corymbosum*, although the same treatment will give us fine plants of the varieties.

We must not, however, take any of the dwarfs or weak-growers ; and we select *corymbosum* as being a good grower, and easy to obtain.

Let the plant be young, and in vigorous growth ; give it plenty of sun, air, and water ; and, as soon as the roots touch the sides of the pot, give it a shift into a size larger, disturbing the roots as little as possible ; and continue this treatment until we have the plant in a tub two feet in diameter. Carefully pinch out any bloom as soon as it appears, and train the strongest shoot as an upright for the main stem of the plant ; tying the

others to a fan-shaped trellis, and pruning out any which are not needed. It is best to begin our culture in early spring ; and, as soon as the weather is warm enough, set the plant out of doors, being careful to give plenty of water, and never to allow the sun to heat the pot (to prevent this, it is best, as soon as the plant attains any size, to use wooden tubs). Keep the plant growing all summer, never allowing it to flower, and occasionally giving weak liquid-manure. By autumn you will have a sizable plant : remove to a sunny window before the first frost, and grow the plant as before. The first winter, the side-shoots may be allowed to give a few clusters of bloom ; but the leaders must be kept to wood. Continue the same culture year by year, and your plant, when five years old, will be from three to five feet high, half as broad, have a stem as thick as your finger, and give you all the bloom you can desire.

Such a plant should be grown in a window reaching to the floor, that it may be a mass of foliage and flower.

The only after-culture necessary is attention to watering, and pruning out the weak shoots.

The plant will never become self-supporting, but should have a tasty trellis.

What prettier plant is there than the Fuchsia ?

All species and varieties are graceful, and worthy of window-culture. Most are summer-bloomers ; but there are at least two which can easily be procured, which flower freely in winter, and make good window-plants. These are *F. serratifolia* and *speciosa* ; the former with pink and crimson flowers tipped with green, the latter with pinkish-white and red flowers.

Their culture is simply to get a good summer's growth, and thus obtain a good winter's bloom. Our plan has been to set the plants in a rich soil in the open ground in spring, regulating the shape of the plant by pinching during the summer, and repotting about the middle of September. The plants will soon show bloom, and continue to give flowers all winter. Of the two, *F. serratifolia* is the handsomer plant, as the foliage is very fine ; but *F. speciosa* is the freer bloomer.

Plants from spring-struck cuttings are preferable to old stocks.

CIDER AND CIDER-MANUFACTURE.

CIDER, if not one of the proximate, is one of the ultimate results of horticulture, and deserves more attention than it has ever received in our horticultural journals. Many things have conspired to put this beverage in the background. Careless manufacture formerly produced an inferior article, and the price was so low as not to justify any great care in making. The common price of cider in New England, thirty years since, was a dollar per barrel; and, for this sum, farmers could not be expected to spend much time in its manufacture. Whether the low price was the effect of an inferior article, or the inferiority was the result of cheapness, we leave for political economists to decide. At all events, the price of the cider was low, and its quality equal to its price; while the beverage was esteemed very plebeian. Then came the Temperance reformation, which put its ban upon fermented as well as upon distilled liquors. In zeal for total abstinence, many orchards were cut down, cider-mills allowed to rot down, and scarcely cider enough was made to supply the wants of the vinegar-barrel. For twenty years, we did not venture to touch the proscribed article. We must confess, this was yielding to public opinion rather than to our own convictions.

Gradually, re-action from this extreme view took place, and the little hand cider-mills came into use, by which a superior article was made for family consumption. The beverage was not found so full of disease and death as had been supposed: on the contrary, it was health-giving. There can be no question that most stomachs crave something of an acid nature. This is particularly true of bilious constitutions; and no acid proves more efficacious in keeping the stomach in good tone than malic, especially when combined, as it is in bottled cider, with a good proportion of carbonic acid. Physicians prescribe it in cases of dyspepsia; and the general testimony is, that this uncomfortable disease seldom occurs where cider or cheap sour wine forms a common beverage. The testimony is no less conclusive, that temperance, as well as health, is promoted by the use of fermented acid drinks. These allay the craving for the more exciting alcoholic beverages. Travellers assure us that cases of intoxication are rarely to be met with in the wine-drinking countries of Europe. The peas-

ant makes his dinner from a crust of bread, washed down with a small bottle of cheap sour wine ; and esteems himself fortunate if he can have for a relish a bit of cheese or a pickled onion. With this simple but healthful diet he is invigorated for his afternoon's work, and never knows the diseases nor the remorse arising from intoxication. Wine we have not, and cannot expect to have, in cheap abundance in New England ; but we have a substitute for it in cider. We may be plebeian in our tastes ; but we greatly prefer good cider to cheap wine : and apples can be raised, and cider manufactured, at one-tenth of the expense of grapes and wine.

Some of our radical temperance-men affirm that there is no nutriment in cider ; that it only stimulates the nervous and muscular system to a temporary unhealthy action, and is succeeded by a re-action which is as depressing as the action is exciting. Parton, in his famous article, "Will the coming man drink wine?" seems to have this impression ; but he has evidently studied history more than physiology. The analysis of wine and cider may not give many elements of nutrition ; neither will the analysis of tea : still, there can be no doubt that tea is an economical article for the laboring-classes. The tired washerwoman craves it for her dinner, and finds refreshment and strength. Our soldiers found that tea and coffee supplied the place of more hearty food ; and in long, fatiguing marches, tea was preferred to beef. Observing hotel-keepers notice that strong tea furnished to their hungry guests saves more costly articles of diet. The philosophy of it is, that tea and coffee prevent the waste of the tissues of the body ; and the action of wine and cider is analogous. Whoever has made a dinner of bread and cider knows that his strength is renewed and continued without an unhealthy re-action ; and the effect on most stomachs is more healthful than that of tea. We therefore believe that cider is one of the good gifts which are to be received with thanksgiving ; and we desire to see its manufacture so perfected, that it will rank with wine in public estimation : and, if our experience can add to the stock of information on this subject, we cheerfully give it, though we may encounter the reprobation of some ultra abstinence, not to say temperance, men.

In general, we may say that the same principles that govern the manufacture of wine hold good in making cider ; for cider is merely wine made from apples instead of grapes, and deserves the name of wine certainly as

much as the fermented juice of currants, raspberries, and other fruits, that we dignify with this name. To be more particular, no good cider can be made from unripe fruit. We should laugh at the man who should undertake to make wine from green grapes. It is just as foolish to make cider from green apples. Sugar is essential in all fermentation. As fruit matures, the starch is converted into sugar ; and only when mature is the fruit fit for eating, or conversion into wine. Providence has made all unripe fruit unpalatable, so that neither man nor beast should be tempted to eat it in its green state. In unpropitious seasons, the vintager adds sugar to the expressed juice of his grapes in order to supply the deficiency of saccharine matter and perfect the fermentation ; and few if any of the grapes of New England contain enough sugar to make good wine without this addition. Cane-sugar, however, never gives a flavor equal to that naturally produced in the fruit. The nearer to perfect ripeness, therefore, we can bring our apples, the better will be our cider. We have tried adding sugar to the juice of apples, and find that it improves the quality of the cider as much as it does wine. If sugar is added to the juice of any fruit, it should be of the purest kind. It is a common mistake to suppose that the flavor of Muscovado sugar will work off during the vinous fermentation : it is continued even into the acetous fermentation, and deteriorates the quality of the vinegar.

As a second rule, no rotten apples, nor bitter leaves, nor stems, nor filth of any kind, should be ground for cider. The wine-maker who seeks a reputation for a superior article looks well to the condition of his grapes before he allows the juice to be expressed. We do not like to eat rotten apples ; and they are no better for drink than for food. No wonder that a prejudice should exist against cider in the minds of those who have seen the careless way in which it is sometimes made. We have heard it called, and not inaptly, the expressed juice of worms and rotten apples. Perhaps, if we could see the process of manufacturing cheap wines, our prejudices against them would be equally strong. There is no economy in such carelessness. If cider is worth making, it is worth making well ; and then, with a good conscience, we can ask a good price, and be sure of getting it too ; for a good article is always in better demand than a poor one.

Much cider is injured by being pressed with musty straw. In this re-

spect, the little hand-mills have the advantage, for they require no straw; and there is little straw so bright and clean as to be totally free from dust and an unpleasant odor. We very much question whether straw is of any advantage in the large power-mills. It doubtless aids in conducting the juice, but it also absorbs not a little; and the danger of a bad flavor from it is so great, that we should discard it altogether. The press can be made small, and of birch or some other hard timber, that will not contaminate the cider. Two presses are really necessary for each mill, so that the pomace can be exposed to the air in the one, while it is being pressed in the other, and thus acquire a deeper color.

Perhaps the most essential requisite for good cider is the cask in which it is to be preserved. Few old cider-barrels can be cleansed so as to be fit for use again. We have seen them soaked in running water for days, and still retain the seeds of putrefaction. Fresh-slacked lime we have found one of the best disinfectants; but we prefer a new oak-barrel, or one in which whiskey or alcohol has been kept. We have heard linseed-oil barrels recommended, as the oil will rise to the surface, and prevent rapid fermentation. They are good for those who like them. We prefer to shut off the air at the right time with a good tight bung. If it is desired to keep the cider in the state of must, it can easily be effected by boiling it a little, and then bunging up the cask tightly. This is the canning principle; and, if the cask is tight, the cider will be found as sweet at the end of the year as when first put up. We doubt whether the medicinal effect of such cider is as good as when it is allowed to ferment for a few days, and a little alcohol, and not a little carbonic acid, are generated. Whenever the cider arrives at the proper stage of fermentation, — and the time for this will vary from a week to a fortnight, as the temperature of the weather may vary, — the cask should be closed tightly, and all air excluded. Some say that a pound of mustard-seed or a pint of horse-radish should be added to each barrel when the bung is driven, and claim that this prevents further fermentation. They may add a little pungency to the cider; but we do not see how they act to prevent fermentation; nor do we know how fermentation can proceed without air. Prof. Horsford, a few years since, suggested sulphite of lime to keep cider sweet. It certainly has this effect, but, at the same time, neutralizes the peculiar acid, on which much of the good

effect of cider depends. If, at the proper time, the cask is made air-tight, or the cider is securely bottled, we much doubt whether any of these artificial ingredients are an improvement. If more color and richer body are desired, a quart or two of boiled cider added to each barrel will impart them.

Cider, like every other blessing, must be used with moderation. As the sweetest things can become the sourest, so our greatest blessings can be perverted into great curses. We feel bound to speak well of a bridge over which we have crossed safely ; and cider has bridged us over a severe attack of jaundice, and we find it an excellent aid to digestion. If the experience of others differs from ours, we shall not quarrel with them, but only agree to differ.

A. H.

WHITE CUCUMBERS.

By FEARING BURR, Hingham, Mass.

THESE cucumbers, of which the White Spanish may be considered the type, appear to be little known ; or, if cultivated at all, seem to be regarded as objects of curiosity, rather than as possessing any merit as a table-vegetable. They are distinguished from the kinds commonly grown by their color, which is white from the formation of the fruit until maturity, at which time, instead of changing to russet-brown, the skin assumes a clear, soft lemon-yellow.

Accustomed as we have so long been to the delicate pea-green which characterizes the flesh of the cucumber, and which indicates the fresh, crisp quality so much esteemed in this vegetable, it is not easy to satisfy one's self that these properties are contained in the pale, almost pure-white flesh of this class of cucumbers.

During the last season, we received samples of seed of three new varieties, which we have given a trial. They were planted at the same time, in the same soil ; and the cultivation bestowed was the same.

Early White. — The plant was scarcely distinguishable from the Early

Russian ; and the fruit was nearly of the same size and form, measuring, on the average, three inches and a half in length, and two inches in diameter. It was some days later than the last named, of good quality, but appeared to be of tender habit ; and the yield was small.

Long White. — Resembles the White Spined. The vine is a healthy grower ; the fruit is of good size and form, measuring six or seven inches in length, and two inches and a half in diameter ; and the yield was satisfactory. The flesh is crisp and tender, and we consider it in all respects superior to either of the varieties tested. It promises to be an acquisition, and is recommended for cultivation.

Extra Long White. — The plants were tender : they made a slow, feeble growth, and we failed to obtain a perfect specimen of the fruit. The vines appeared to be naturally quite productive, but not a fruit attained its full proportions.

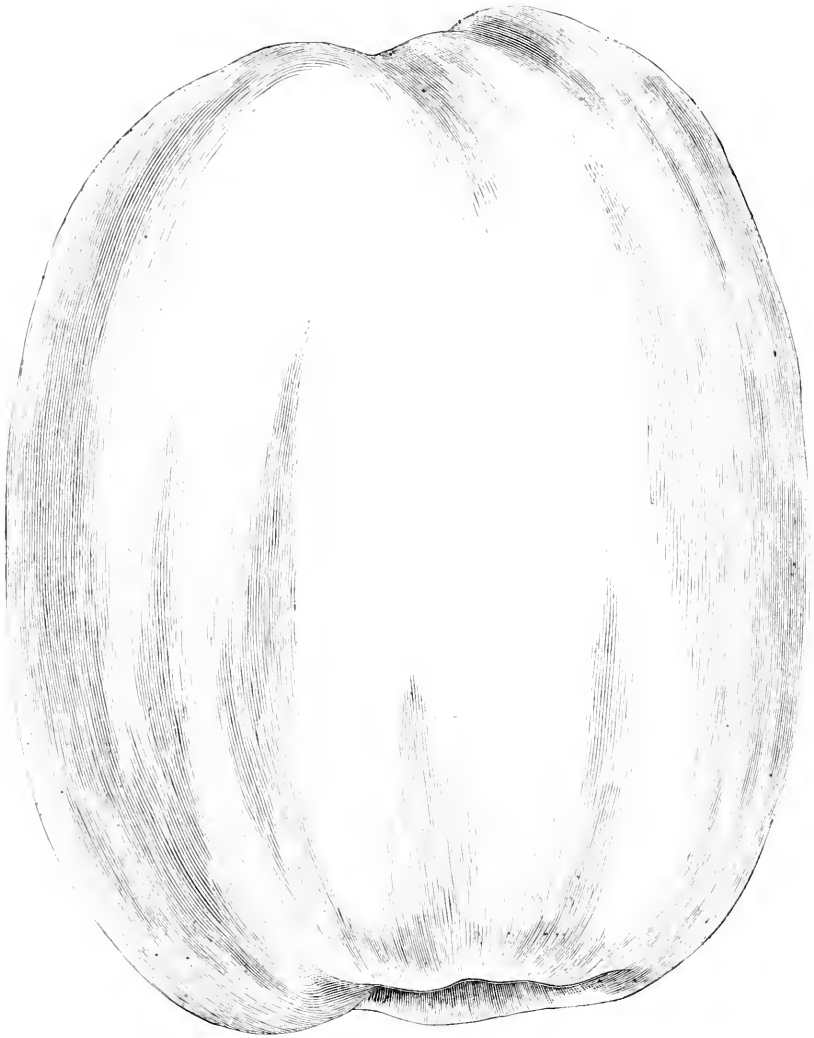
For the seeds used in the trial we are indebted to Mr. George Everett, seedsman of Messrs. Ames & Co., Boston, Mass.

MAMMOTH QUINCE.

THE mammoth quince of which we give an engraving was sent us last autumn by our friend M. L. Dunlap, Esq., of Champaign, Ill., who supposed it to be a seedling of the Portugal. Mr. Dunlap received it from Mr. A. A. Arick of Cairo, Ill., who stated that they grew on the opposite side of the river in Kentucky. The tree bore two bushels, and the specimen figured was not the largest. One of the largest weighed two pounds and six ounces.

This monstrous fruit is evidently the production of an extremely rich soil. It was somewhat coarse in texture, and apparently deteriorated in quality by its enormous growth, though it made a good marmalade. We deem it worth trying from its large size, which would give the impression that it is an unusually vigorous kind. If any of our readers are acquainted with it, we would be glad to know whether it has been tried elsewhere, and

what is its character ; and also whether it is a seedling, or an old variety



MAMMOTH QUINCE.

so much enlarged by growing on a very rich soil as not to be recognized.

KEEPING PEARS.

By ROBERT MANNING, Salem, Mass.

THOSE whose memories extend back to the time when late pears began to be generally cultivated will recollect that great difficulty was experienced in ripening them. These specimens were either of varieties of a breaking texture, or were so immature when gathered, that it was impossible that the ripening would ever be completed. Such is still the case with certain varieties; and sometimes the Easter Beurré is found with one side fully mature, while the other is so undeveloped as to be incapable of ripening. Soon, however, better varieties were introduced, cultivation improved, and the trees attained to maturity, and then it was found that the pears ripened too soon; and decay, being the continuation of the ripening process, next took place: and soon the complaint became general, that pears "would not keep."

Decay is essentially a process of fermentation, and is hastened by whatever promotes fermentation. Whenever the skin of a pear is broken, so that the oxygen of the air, which is the great agent in fermentation, is admitted to the juices of the fruit, fermentation commences immediately. Hence the importance, if we would have fruit remain sound, of the utmost care to avoid scratching or bruising it.

Heat is the most powerful agent in promoting fermentation; and hence, in keeping fruit, the object is to maintain the lowest possible temperature, while avoiding injury by freezing. This may be secured either by building a house with double walls, filled in with non-conducting material, like an ice-house, or, more cheaply, in a cellar. The former will have the advantage, being above ground, of greater dryness; and, the better to secure this, it may be placed in the upper story of a building. But it is believed that a well drained cellar, if provided with ventilators opening on the north side, will answer every purpose, and at much less expense. A cellar under an out-building is preferable to one under a dwelling-house.

Light is well known to be one of the strongest stimulants of vegetable growth, and its effect on the skin of the fruit continues after it is gathered; and therefore all fruit intended for long keeping should be wholly excluded from the light. And the windows to a fruit-house should be

no larger than to admit the light necessary in examining the fruit, and should be provided with shutters, to be kept closed as much as possible ; or artificial light, which is less stimulating than sunlight, may be used.

Moisture condensed on the skin of pears tends to decompose it ; and therefore the air should be as dry as possible, without causing the fruit to shrivel. The moisture arising from evaporation may be removed by means of the chloride of calcium, which absorbs twice its own weight of water, and can afterwards be dried over a fire, so as to be used again. If the room becomes too warm from any cause, so that it is necessary to admit cold air from the outside, great care should be taken to do this only when the air is dry, so as to avoid the deposition of moisture on the fruit.

The beautiful, warm, damp days of Indian Summer, in October and November, are the most trying time for late pears. If they can be kept through this season, comparatively little difficulty will be found in keeping them through the winter in a cool, dry cellar. They are often placed in barrels, which are piled out doors on the north side of a building ; but I would suggest placing them in a building amply provided with doors and shutters, which should be opened so as to admit air freely during the night, and carefully closed during the day, so as to exclude both light and heat. The thermometer at this time frequently falls below freezing at night, and, if the house were closed at sunrise, it would probably remain very near that point through the day. It is well known that pears may be exposed to a temperature a few degrees below freezing without injury, and that they may safely be subjected to a temperature of less than thirty-two degrees in still air, when they would be frozen in a current of air of the same temperature. Still, it is of the highest importance to keep them at an equable temperature ; for the expansion and condensation of the juices by variations of heat hasten their fermentation.

As soon as there is danger of freezing, the fruit should be removed to winter-quarters. Before doing this, the specimens likely to ripen first must be separated from those which promise to keep longer. Pears grown on an old or unhealthy tree, or a warm soil, will generally ripen sooner than those from young and healthy trees, or strong, cold soils. I have found it a good plan to gather fruit after the middle of the forenoon, when

the dews have dried off, and devote the morning to sorting and arranging what has been picked the day before.

The English still continue to recommend placing fruit separately on shelves, and in their damp climate it may be the best method ; but here it has been found much better to exclude the air by packing it in tight boxes or casks. Not more than two layers of large pears should be placed in a box ; for the weight of the fruit above disfigures that below by flattening its sides. All boxes, casks, &c., must be perfectly sweet and clean. The empty flour-barrels so often used to receive fruit should be thoroughly washed and dried ; for any flour which adheres to their sides is sure to mould. Fruit of every kind has the power of absorbing odorous matters, and therefore all decaying specimens and other vegetable matter should be immediately removed. It is impossible too often or too forcibly to repeat the caution to gather pears with the utmost care so as to avoid bruising or even chafing them while packing ; and at all times they should be handled no more than is absolutely necessary, and then carefully and gently.

Different varieties have been found to require different treatment ; but our knowledge on this point is far from being perfect. The Vicar of Winkfield is thought to require more warmth than others ; and the Easter Beurré and Chaumontelle to be benefited by a somewhat changeable and moist atmosphere. The Josephine of Malines, which partakes of the nature of the Colmar, though difficult to ripen when grown on young trees, matures easily as the trees attain age. This is an instance under the general rule before stated, that the fruit of old trees ripens earlier than that from young trees. In the comparatively moderate heat, but longer seasons, of Europe, pears undoubtedly ripen more gradually than here ; and it would appear probable that the process continues slowly after they are gathered ; while our pears, urged forward by the fierce heat of our shorter seasons, not only grow and ripen faster upon the tree, but continue to do so after being gathered, rendering them more difficult to keep ; and some, like the Bergamotte Fortunée, which in Europe are reputed good dessert pears, never become melting here, needing, probably, a longer season.

We have yet much to learn in regard to keeping fruit of all kinds ; and I present these imperfect views, partly with the purpose of inviting discussion of the subject, and in the hope that the readers of the Journal may be

induced to communicate the results of their thought and experience. And I would urge upon those who are engaged in raising new varieties of pears from seed, the importance of directing their efforts to obtaining sorts which may be kept through the winter as easily and certainly as apples are now.

PRUNING TREES.

SET a green hand to prune trees where limbs of any size are to be removed, and the chances are, ten to one, that he will commence at the top, and saw through the limb, until it falls by its own weight; tearing down the bark and wood, inflicting a great, ugly wound, which may require years to heal, and which, if not carefully protected from the weather, will cause such decay as to destroy the tree. The method commonly recommended to prevent such injury is to begin at the bottom, and cut half-way through, and then finish from the top, or, with very large limbs, to have them supported by a crotched pole or pitchfork held by an assistant below; but we have found a better plan, and quite as easy, to be to make two cuts, the first at a convenient distance, say a foot, from the point where we wish the limb removed. This short stump can, except in the case of very large limbs, be easily held in one hand, while the final cut is made with the other.

After a large limb is sawed off, the surface should be pared smooth; and, for this purpose, we have frequently found a common carpenter's chisel, about two inches wide, much more convenient than a pruning-knife. To prevent decay, there is nothing better than one or two coats of good oil-paint; and it should be as near the color of the bark as possible, so as not to disfigure the tree. All tools used in pruning should be of the best quality, and kept as sharp as possible: it is poor economy to use any others. Limbs are sometimes cut too close; but for every such one there are a hundred not cut close enough. Every cut, large or small, should be made in a smooth, clean, workmanlike manner; a poor workman is soon known by hacking off a limb with a dull knife, leaving as many facets as on a multiplying glass.

THE STORY OF VINELAND.

ONE autumn morning, a youthful lawyer left his cobwebbed office in Philadelphia, and took passage on the railroad which links that ancient city and the Cape-May coast. Thirty-four miles away from the home of the broadbrims, he stepped from the cars, and looked around. It was no Arcadian landscape that met his view. There was not even a faint suggestion of the Happy Valley of Amhara, which the policy of antiquity had destined for the residence of Abyssinian princes. There were no dainty bits of rural beauty, of silver stream, or grassy hillside, spattered with shadows of wide-spreading elms. Far otherwise. A great plain stretched out before him on every side. Climbing to the top of a spindling pine-tree, he could look off on miles and miles of stunted forest. To the northward, nothing but boundless shade; to the east, boundless shade; to the west and south, the same low line of horizon, mingling dimly with melancholy boughs. Here and there, he saw blue smoke rising from the hut of a coal-burner, and curling lazily into the upper air. Now the broad expanse which lies just under his eye is not popular, and it really does not appear to possess any attractive feature. The soil is light, and generally believed to be almost useless for purposes of agriculture. It has never been occupied, so far as known, save by roving hunters; and the only sounds that infrequently disturb the long reign of silence are the shots of riflemen, or echoes of the woodman's axe. But our recreant disciple of Coke and Blackstone happens to be owner of thirty thousand acres, more or less, of this vast wilderness. What will he do with it?

Walking along a winding pathway, obscure, and so sandy that deep foot-prints are made at every step, and so narrow that the underbrush catches at his clothing, he comes at last upon a small house, with a bit of cleared space around it. This shall be his headquarters; and he sits, that first evening, in the little room, perfecting his plans. He is firm in the faith that this scouted section may be made productive and populous. He thinks it especially adapted to small fruits; and he believes that there are hundreds of people who can be induced to try the experiment. He does not forget that his friends endeavored to dissuade him from the purchase;

and he thinks it quite likely that many persons will quietly smile at his folly, and gently put the idea aside with flippant fingers. "But we shall see," he says.

He must reach the public. He is wise enough to know that printer's ink is the Archimedean lever. He tells his story; and multitudes of readers, and "all wanting farms," are invited to address Charles K. Landis, Vineland, Cumberland County, N.J., — a post-office, by the way, which, previous to this time (1861), had not appeared in the directory.

In such a world, as Cowper remarks, there are always enough who are wide awake to the newest suggestion, especially if it promise an improved condition or a chance for the blessed privilege of independence. Hence letters began to be received at the little one-story house in the forest: further information was asked for, and circulars were distributed describing the locality and the scheme of colonization. Meanwhile the projector was busy in opening up avenues and grading streets, and never paused in his advertising bombardment. Soon carpet-baggers began to arrive. Some were sensible young men from the cities, who wanted breathing-space; many were brown-faced farmers from the rock-bound neighborhoods of New England. Occasionally there came a wild-eyed reformer, who looked seedy, and wore long hair, and thought he discovered in the enterprise an embryo Atlantis. Travellers to the new field grew so numerous, that the railroad-managers issued excursion-tickets "From Philadelphia to Vineland, and return." But quite a good many concluded to remain. Dwellings were hastily constructed; cleared spaces increased in number. Ere long, the head-centre could remark, "We have a hundred inhabitants on the tract." This was seven years ago. To-day there are twelve thousand people in Vineland; and still the wonder grows.

And verily it is a wonder. To be sure, other places have worn the seven-league boots: but they were located along the margin of the great tide of emigration that flows unceasingly westward; and they had only to hold out their cups, and find them filled. But the magic town of which we write was entirely outside the influence of the star of empire. Furthermore, as has been hinted, the situation lay under ban of deep-seated prejudice touching the soil; and the views were certainly not enticing. For generations, the "Jersey Barrens," of which there are still hundreds of

thousands of acres uninhabited, and of which the Vineland-tract formed a part, had been given over to coal-burners and manufacturers of glass : and thus the forest-growth was kept down ; and, naturally enough, one received the impression that the land was incapable of better things, and consequently must be poor. What, then, is the secret ? How did it happen, that, despite these drawbacks, the colony advanced with such giant strides ?

Well, in the first place, the enterprise had the charm of novelty. Again : at the outset, actual experiment proved the fallacy of the idea that crops could not be produced. Crops were produced. Furthermore, the land was sold at low rates and on easy terms of payment ; thus enabling men of very limited means to undertake the establishment of homes. Again : the situation was available. One could pack up and go to Vineland without feeling that he was sundering the old associations ; and many who would hesitate long before starting for Kansas or Minnesota, or who would never leave for those distant points at all, would venture a change of residence if only a day's journey separated the new from the old. Again : the climate was known to be exceedingly healthful. Again : there is the fascination, and the supreme advantage to the poor, of growing up with a place where one may live plainly, and wear cheap clothing, and never be disturbed thereby, because all are in like condition : and each may say to the other, " It is a little disagreeable just now, to be sure ; but we shall have pleasant times by and by." A portion of the considerations named are common, and, of course, have influence in new colonies generally ; but there were other influences brought to bear in Vineland, which were radical and entirely original, and without which the progress, the prosperity, and the promise of the settlement must have been very materially reduced. These reformatory movements were not akin to those in which too much is attempted. Mr. Landis indulged in no Utopian dreams : he was too well bred for that. He did not think to inaugurate a system in which the course of true love should never run rough, and in which virtue and heroism should always find reward. He did not hope even to smooth at once all the ruts in the old road hardened by a thousand years of travel. He only ventured on advance movements which appeared to lie within the compass of possibility. Foremost of these was the prohibition of liquor-selling. He adopted this restriction in the beginning, not as a philanthropic

measure merely, but as an economic measure as well ; believing it the best plan as a matter of policy alone. As was expected, the consequences have proved most happy. The class of people attracted thereby are the best class of people ; and those who were kept away are those whose presence would have been a disadvantage. It is estimated that the total saving of money thus insured is at least five hundred thousand dollars per annum ; and the percentage of pauperage and crime in the place is much lower than in any other community of equal numbers. The great and far-reaching moral effects, which, as time goes on, must result, are pleasant to think of, but quite too vast to compute ; and the founder of Vineland, if he has done nothing else, merits applause for his sagacity in instituting, and for the steady determination with which he resisted some early attempts to break down, this defence.

But he has done something else. Further to promote the physical and mental improvement and happiness of the people, he organized an educational system on liberal principles, which, in due time, led to the formation of numerous societies and schools, through whose efforts much of the desired good has been made attainable.

A. B. Crandell.

(To be continued.)

COMTESSE DE CHABRILLAND ROSE.

By FRANCIS PARKMAN, Jamaica Plain, Mass.

ONE of the best, though not one of the newest, of the so-called "perpetual roses." There is none of more perfect form and more delicate coloring. If we said that there was none of more vigorous constitution, we should exceed the truth ; though, in this respect, the Comtesse de Chabriland is quite equal to many other perpetuals. It grows very well on the Manetti stock ; but we have found it less long-lived than some other varieties. Its shape is so perfect, and its soft, clear flesh-color so attractive, that it is always a favorite flower with the English exhibitors of roses ; and that vivacious and entertaining amateur, the Rev. Mr. Radclyffe, seems never tired of extolling its attractions. The crowd of new roses which make their *début* every spring from the prolific gardens of the French rose-growers rapidly eclipse, by the mere power of youth and novelty, the favorites

of a few years' standing ; but the Comtesse de Chabriland, though it first



appeared at least ten years ago, is still courted and admired.

DRAINING FLOWER-POTS. — No. II.

By A. VEITCH, New Haven, Conn.

THE physical properties of the soil in which plants are potted has something to do in determining whether much or little drainage-material should be used. What we mean by physical properties in this connection is the relation which one particle bears to another, and to all the rest in the aggregate, as regards bulk and specific weight. If we take, for illustration, a sample from a gravelly or sandy district, we shall find that there is great diversity as regards these particulars; which diversity gives it a shifting and unstable character. It is true, when plants are just potted in it, and for some time thereafter, all goes well; but by and by, and after repeated waterings, its whole texture and framework is changed, — changed by more or less of the finer particles being carried by the descending water to a lower level, and filling up the interstices toward the bottom of the mass. From this tendency to change, the holes in the pots are in imminent danger of being closed or partially obstructed; and when the outflow is thus retarded so as to set back the water in the pot, the whole would speedily become disorganized, and settled down upon itself, never again to be a fit medium for the transmission of water, or the development of feeding roots. By adopting the non-crocking theory while dealing with a soil like this, this state of things would not be improved, but rather made worse; and the only preventive we yet know is the old-school method of building good drains, and taking care they never get choked. These views, I believe, coincide with the experience of every gardener in and about New Haven. We are not so favorably circumstanced as regards mould for pot-culture as many are in other sections of the country. The site of this city and immediate neighborhood is a prehistoric sea-beach, traversed by river terraces and dried-up channels; and all around unmistakable evidence is afforded of this by the large deposits of sand and gravel. It is true, throughout the ages, a sparse deposit of vegetable matter has been accumulated, varying in depth from nothing to two feet, and that in most places largely made up of the underlying materials; but, beyond the arenaceous beds, a transition takes place, and another and better quality of surface-soil becomes general.

All along the dikes which run north, and through the Connecticut Valley, the trap and new red sandstone deposit are frequently found in close proximity; the latter having been uplifted by the former at its formation. They are at rest now, and long have been; only scraped and gnawed by the various processes of disintegration. The *débris* thus formed constitutes a great part of the surface-soil in these localities; which is a fine, friable loam, and of much greater horticultural value than any to be got from the gravelly stretches. In character, it differs from the other in the particles being much more uniform in size; on account of which, it maintains its natural texture, and the position imposed upon it when placed in the pot, not only for a month or two, but for a year, and simply in obedience to that law which governs all solids alike. This uniformity we claim to be of the utmost value in pot-culture; and plants grown in it do not suffer so readily from excess of water as when potted in a sandy soil, owing to the fact that its capacity for water is much less than the other; which capacity, as regards every kind of soil, is just in proportion to the spaces between the particles. "The atoms only of bodies are truly impenetrable."

We feel reluctant to close these remarks without for a moment referring to the difference of climate as regards heat and moisture; more especially the latter, in relation to the subject of pot-drainage. This seems more needful, as the disposition is abroad to treat the subject irrespective of any such consideration. It is claimed by the non-croaking theorists that "plants drain from the sides, and not from the bottom, of the pots."

It would, perhaps, be more correct to say they drain off in this way the water which the mould is capable of taking up by absorption, all beyond from the bottom alone; and, if ample provision is not made for this, the side drainage will be insufficient to preserve that medium degree of moisture in the mould which every sensible gardener seeks to maintain.

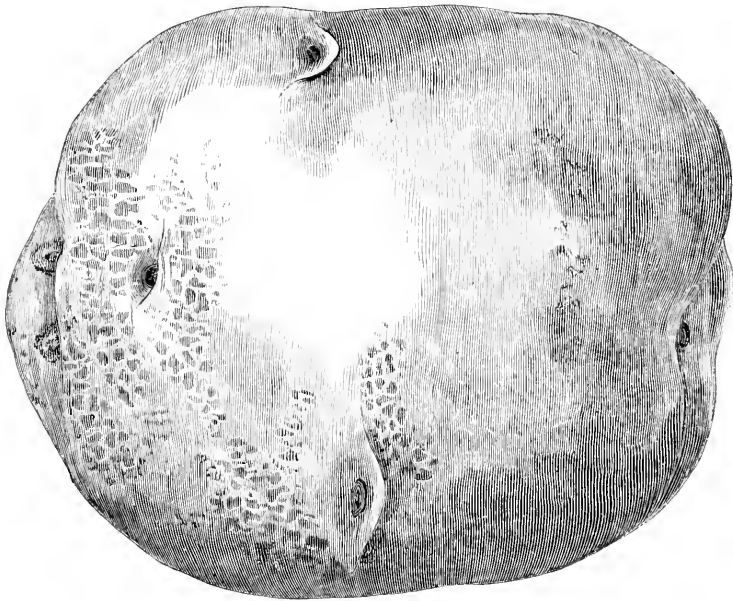
But, granting the statement to be true, it would not be of universal application; for this mode of drainage is entirely dependent upon the hygrometrical condition of the atmosphere; and this, we know, varies from almost positive saturation to being very dry. If in the first state, the process would be practically suspended, but for difference of temperature within and without the pot; and all along the scale, betwixt the points of wet and dry, the passage of water through the vessel would be increased or dimin-

ished, just as one or other of these extremes was approached. Now we need not hunt up statistical reports of learned societies to ascertain the difference betwixt the climates of Great Britain and the Northern United States as regards atmospheric moisture ; knowing as we do, experimentally, that it is so great as to necessitate much more attention to drainage in that country than in this. I speak advisedly, having followed the profession for about an equal number of years in both ; and although not able to note the difference as indicated by Saussure's Hygrometer, or the wet and dry bulb thermometers, I have not been unobservant of the same class of facts which these instruments record ; in a less scientific way, perhaps, yet quite natural and true, as indicated by doeskin garments, homespun, or shoddy, as these may have been in requisition, or imposed upon me. In Britain, gardeners have to apply fire-heat for days and weeks together, to dry up the damp in their greenhouses, and water with the utmost care ; while here, quite frequently, they follow a directly opposite course : and in both cases for the very best of reasons. What force or philosophy, then, is there in that "sneer" which curls upon the lip of the "smallest boy" in Jersey when he looks upon "the imported ten-dollar novelty" with a few potsherds at the bottom of the pot? This looks very much like trifling with an important subject. Still, there is hope for that boy when he gains a large experience, and understands its true readings.

If the views thus stated be correct (and, if not, let them be corrected), the inference may fairly be drawn, that any one taking upon himself the onerous duty of propounding rules for the guidance of all engaged in the cultivation of pot-plants, whether in this or other lands, and making all his deductions from his *one* compost-heap, and the atmospheric conditions of his own neighborhood, will be apt to arrive at false conclusions regarding the action of others who may have the best of reasons for doing things differently. We say not this by way of begging the question, or in vindication of a practice which cannot stand upon its own merits, but to state the conviction, that every man who has looked into the subject, and who does not wish to stand sponsor for a weak-kneed bantling, a peccadillo, a crotchet, or a whim, will continue to suit his action to his surroundings, and drain or not drain, as exigencies require.

"KING OF THE EARLIES" POTATO.

THIS new variety was originated in 1862, from the Garnet Chili, by Albert Bresee of Hubbardston, Vt., and has been known as "Bresee's No. 4." The vines are of medium size, or a little below; leaves large. It bears no balls; tubers large and handsome, roundish, a little flattened; eyes a

**"KING OF THE EARLIES" POTATO.**

little pink, and rather small; skin flesh color or dull pinkish white; flesh white, cooks mealy, and is of the best table-quality. Matures very early, ripening some days earlier than the Early Rose, and is a large yielder. It has proved, so far, very hardy.

LOBELIA CARDINALIS.

THERE is a little nook in my garden which I call the "Wilds," because only such plants grow there as I have collected in my rambles in the woodlands. The most attractive of the many wild flowers, mosses, and ferns, transplanted from their native wilds, is a group of that incomparable plant, the *Lobelia cardinalis*, which I transplanted last July while the plants were just coming into flower.

Perhaps some of your readers will be glad to learn how easily and successfully this can be done with proper care and management. Selecting plants that grew in rather a dryish, stiff, or compact soil, I cut them up in cubes of about ten inches soil, placing them (about twenty in all) carefully in a box, and packed moss about them to keep the soil intact, bringing them home a distance of eight miles. Having a bed prepared with twelve inches of leaf-mould from the woods, peat, and river sand, in equal parts, with a little spent hot-bed manure in the bottom, I placed the cubes closely together, filling in the crevices with the same kind of soil as at the bottom, and gave the whole a good soaking from the cistern. The plants did not appear to be affected in the least by the removal, but continued to grow and flower as perfectly as in their native meadow.

For two months they continued to flower in tall, graceful spikes of the most vivid scarlet, and seeded fully and completely. The stools now look fresh and thrifty, promising finely for next year. I doubt not, another summer, they will prove vigorous plants, and yield abundant bloom.

It is a mistaken notion that this plant will thrive only in a wet soil. My observations are, that although they are frequently found in wet places, sometimes even in running water, they grow much larger, and flower longer and better, in a stiff, clayish peat-soil, which becomes dry in dry weather. In such localities the roots are shorter and more confined, therefore more readily transplanted. A couple of plants transplanted last year in a similar manner grew and flowered finely this year, though planted in a soil far from being wet, and with no attention except an occasional soaking from the watering-pot during a few weeks of drought.

It is a matter of surprise that a flower of such rare beauty and attractive splendor, and of which some writer has truly said, "before the intense brilliancy of whose colors the exotics pale," should be so much neglected here, where it is indigenous, and so easily grown, when it is so highly prized and sought for by foreign florists, where it is an exotic, and difficult to be raised. Being *indigenous* here is probably the reason why it is so often overlooked, like several other of our native wild flowers; though their graceful outlines, exquisite tintings, and robust beauty, far excel many of the greenhouse-tribe, nursed so often with assiduous care, and watched over with tender solicitude.

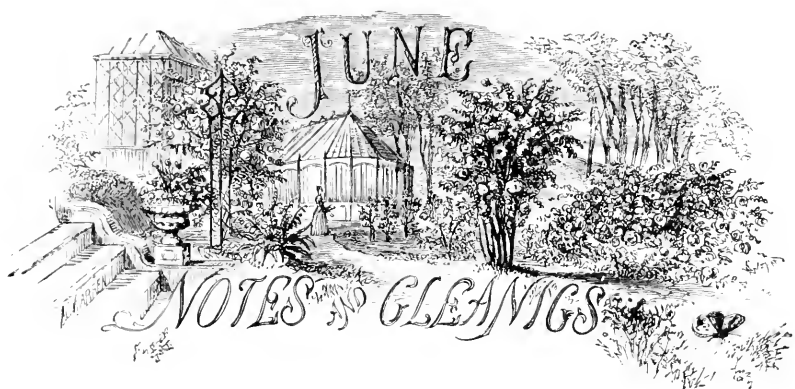
Once fairly established in a congenial soil, the lobelia will annually give for nearly two months a mass of bloom on handsome stalks, and in a dye so intense as to be unapproached by either rose or verbena, bouvardia, or even the much-vaunted scarlet salvia; and that, too, with very little care or attention. And, when the hoary frosts and rigors of winter come, it will kindly take care of itself, asking no shelter in the greenhouse or cold frame, but simply to be let alone; and, when summer comes again, it will reward you with its gay flowers and gorgeous hues. *C. W. Ranlet.*

HOLYOKE, MASS.

AKEBIA QUINATA.

CONTRARY to expectation, this plant has proved hardy in the vicinity of Boston, and flowered freely.

It is difficult to convey an idea of the beauty of the rich clover-like foliage, or of the varied forms of the flowers. It requires only common garden-soil, and will climb fifteen feet in a single season.



CRITIQUE ON THE MAY NUMBER. — Well done, Mr. Barry, we are glad once more to find you have taken pen in hand, and certainly to good purpose. The article on the difference between *Pinus ponderosa* and *P. Benthamiana* is to the point, and it is such articles that are much needed; they give the result of experience and observation: the more of them the better, we say.

Rogers's Hybrid Grapes. — The christening of a child forms an epoch in its life, and why should not the naming of a fruit in its more humble life? Mr. Rogers has done well, before starting his grapes anew in the world, where they have so long wandered nameless, though not numberless, to gather them together and describe their different characteristics. The quality and value, for table and wine, of these grapes will long afford a subject for discussion; but, whatever it may finally be decided to be, Mr. Rogers will ever be held in grateful remembrance as the first to try the experiment on any considerable scale of hybridizing the European and American grapes; by his success giving the strongest stimulus to similar efforts, which are, no doubt, destined in the future to produce results now undreamed of. But couldn't he have completed his list of names without using those so unfitted to American tongues as Goethe and Gaertner?

The article of Prof. Russell, on "New Trees and Shrubs of California and Oregon," is full of information. Doubtless, our own country affords far more valuable "novelties" than many for which we pay high prices, and get nothing but disappointment. We say to our nursery-men, Look at home for new plants for our gardens. The completion of the Pacific Railroad brings us within a week of San Francisco, and gives rare facilities for floral acquisition.

"The Pink Family," continued, by Joseph Breck, gives us brief descriptions of the different species. But why dismiss all the pretty dwarf species with a notice

of five lines, and call them "not of much consequence"? Some are gems of beauty, and, though not large-flowered, are worthy of extended cultivation.

Van Mons's Theory. — Here we find another laborer experimenting, three generations ago, not only to produce new fruits, but to ascertain the laws which govern their production; the first, perhaps, to undertake such experiments with scientific hands and eyes. To-day we are enjoying the results of his labors, and whether he raised or only introduced the fine pears which we have received at his hands, or, by his teaching and example incited others to produce them, in either case our gratitude is due to him; and all this, while questioning the correctness of his theory, Mr. Manning freely acknowledges. He might have added, among those whose experience disproves the theory, one whom Van Mons claimed as a disciple, the late Major Esperen; several of whose pears were undoubtedly raised from the *Passe Colmar*. But let us not leave Dr. Van Mons without once more thanking the man to whom such a superlative pear as the *Beurré d'Anjou* is even attributed.

Boston-Market Celery. — Truly an excellent specimen, and well illustrated. As fresh and crisp at mid-winter as when taken from the ground in autumn. We are certainly making rapid progress in the raising and general management of our vegetables; for I well remember the time when celery was rare in our markets after Christmas, or, if found there, was so decayed and rusty as to be almost worthless. Now it can be obtained, white, crisp, and bright, at a moderate price, throughout the winter months, until superseded by lettuce, and, I had almost said, cucumbers; or until the time when asparagus, peas, and other new vegetables render salads less needful.

The English. Mr. Editor, have a saying that "poor management makes poor celery," which I am inclined to think is, in the main, correct, though I somewhat doubt whether, under the most skilful treatment, a variety naturally coarse, strong, and pipy, could ever be brought to the high standard of excellence found in the "Boston-Market." Of one thing I am satisfied, that celery, when allowed to complete its growth before being earthed-up for blanching, never attains the tender, delicate quality of that which has been gradually blanched as the plants have progressed in size and development.

The article on "Improved Peas" introduces several new sorts, which appear to be highly prized abroad. One of these, *Laxton's Long-pod*, seems to have succeeded in a marked degree under our climate, and to have already come into general favor. But are we not relying too much on kinds derived from foreign sources? Why not do something at home, either for the production of new varieties, or by way of improving the old? It is true that climate is somewhat against us in this respect; but are we not lacking in the skilful culture and persistently careful selection for which English growers are so distinguished? I am satisfied, if the attention of cultivators should be turned in this direction, they would find their reward. At present, I am inclined to think there are few, if any, of the varieties of the pea now generally cultivated, that can be claimed as being strictly of American origin.

With regard to foreign potatoes, do you think they always have a fair trial? Perhaps we do not allow sufficient time to test their true value; strangers to

our soil and climate, are not opinions formed from the experience of a single season liable to prove erroneous? Of their general inferiority, there can be no question; still I think it must be admitted, that, in many instances, we have rendered a verdict which a more extended trial might have reversed.

Violets. — Appropriate, seasonable, truly what more charming spring flower is there than the violet? We are glad to see that Mr. Rand, while duly praising the fine Czar and Giant Violets, devotes much of his article to our native species. That figured (*V. pedata*) is one of the most charming of the family, and, in many localities, covers the fields with sheets of bloom. The illustration, however, is too crowded, and does not do justice to the beauty of the flower. We echo the advice. *Grow violets*, and, by following the directions in this article, one may gather violets every day in the year.

Propagating Verbenas and Scarlet Geraniums (pp. 302, 303). — Such articles are much needed. The text for every article should be, State what is to be done, and tell just how to do it, and that, too, in the simplest way; and tell it in the fewest words.

Decorative Palms (p. 305). — The use of fine palms for in-door and garden decoration is yet in its infancy. The plants are scarce, and of high cost; but every year will make them more attainable. For parlor-culture in winter they are very fine, and need very little care. Much attention is now given to them in Europe, and foreign catalogues have long lists of species and varieties.

Bismarck.

USE OF TOADS. — The “*Journal des Connaissances Médicales*” states, that, of late years, French horticulturists have followed the example of the English ones, and peopled their gardens with toads. These reptiles are determined enemies of all kinds of snails and slugs, which, it is well known, can, in a single night, destroy a vast quantity of lettuce, carrots, asparagus, &c. In Paris, toads are sold at the rate of two francs fifty centimes a dozen. The dealers in this uninviting article keep it in large tubs, into which they plunge their bare hands and arms, without any fear of the poisonous bite to which they are supposed to expose themselves. Toads are also kept in vineyards, where they devour during the night millions of insects that escape the pursuit of nocturnal birds, and might commit incalculable havoc on the buds and young shoots of the vine.

TILLAGE. — “The three great objects of tillage are, first, to enable the roots of plants to force their way through the soil as freely as possible in search of food; secondly, to produce this food in the soil; and, third, to keep down weeds.

“It is found that of every one hundred parts of a soil of average fertility, not more than one part is in a fit state to nourish plants. This explains why a manure containing, in an available state for plants, only a small quantity of the constituents of the soil, produces a great effect: it also shows the importance of deep, early, and good tillage.”

A HORTICULTURAL Congress is to be held at Manchester (Eng.), July 21 and 22, in connection with the meeting of the Royal Horticultural Society.

To the Editor of the "Journal of Horticulture."

THERE has been no snow here as yet; but ice formed the other day four inches thick in the more shallow ponds of the various parks and gardens, which were instantly covered with skaters. We of New England may envy the Parisian gardeners. Their midwinter is scarcely so cold as our middle of November. Many of our greenhouse plants stand out in perfect safety without protection. A walk of two minutes from where I write brings me to the garden of the Luxembourg, which, as at present arranged, is a combination of the old and new styles of gardening. Here, among fountains, statues, fish-ponds, groves of tall forest-trees, and lawns where the grass is still fresh and green, one sees ivy trained in long festoons from tree to tree, and shrubs planted in clumps and masses, which retain the verdure of summer. These are chiefly rhododendrons, which are here in vast quantities, varieties of Japanese euonymus, evergreen privets, hollies, mahonias, aucuba, variegated box, veronicas, and various kinds of yucca. The greater part of these would be killed outright by a New-England winter; but none of them have suffered here in the least. Pampas-grass stands out with a thick covering of leaves and thatch. China roses are planted in masses of hundreds, without protection; and the borders are ornamented with tall standard roses, alternating with deciduous shrubs, also grown as standards. The edgings are usually belts of ivy. Vast quantities of herbaceous plants are planted in readiness for early spring flowering. These are set, for the most part, in lines and ribbons extending along the borders for great distances. Thus iberis and arabis are placed in lines alternating with stocks, aubrietia, doricum, and daisies. They are removed after flowering, and replaced with summer bedding-plants.

One of the prettiest specimens of landscape-gardening within the limits of Paris is the Park of Monceaux. The surface of the ground is undulating, and its irregularities have been used with admirable effect. The higher parts are crowned with masses of shrubbery, and the hollows are clothed with the richest green grass. Tall groves, a stream, a sheet of water, bridges, a cascade, an artificial grotto, an artificial ruin, rocks covered with trailing plants, old trees clothed with ivy, strange waterfowl in the pools, and a host of sparrows twittering in the shrubbery, — these are the features of the Park of Monceaux.

There is another park, lately begun, on the opposite side of Paris, which is in some respects the most remarkable piece of gardening which it contains. This is the Buttes Chaumont. The site is notorious. Here, during the middle ages, stood the gibbet of Paris, where corpses in scores were left hanging to feed the birds. Here, after the Massacre of St. Bartholomew, the headless body of Coligny was hung by the feet; and Charles IX. and all his court came to exult before the mouldering remains of their murdered enemy. In later times, the place has served for uses less horrible, but not less ignominious. The adjacent quarters of Paris are occupied by a dense population of the poorer sort, laborers, mechanics, small tradesmen, and a swarm of nondescripts belonging to the "dangerous classes." In short, it is a district in very indifferent repute, and was worse formerly than now. The Buttes Chaumont, besides serving as a general deposit for the rubbish of the neighborhood, was a place of resort during

the carnival, and at other seasons of license, for all the rabble of this part of the city. Issuing at midnight, or long after, from taverns and dens of debauchery, they formed a sort of bacchanal procession, and, reeling to the spot where the old gibbet had stood, drank and danced in a frenzied carouse till morning.

Now, all is changed. The place has been purified of its accumulations of filth, and made to contribute to the health and regeneration, bodily and mental, of the wretched multitude who once made it the scene of their brutal orgies. The work, it is true, is not yet finished ; but enough has been done to show that this disgraced locality will soon be transformed into one of the most striking and unique examples of landscape art in the world. As you issue from a labyrinth of sordid streets, the object that first arrests your eye is a perpendicular cliff eighty yards high, crowned with a small, columned structure of marble, in form somewhat like the famous Temple of Vesta at Tivoli. This cliff is made accessible by an iron suspension-bridge connecting it with an adjacent height, and also by a lofty arched bridge of stone, which spans a neighboring ravine. Crossing one or the other of these bridges, and following a path zigzagged in the face of the rock, you reach with ease the temple at the summit. Below you is a little lake, washing the foot of the cliff, enlivened with flocks of water-fowl, and bordered with shrubbery and trees. The cliff rises in tall fantastic pinnacles, like the spires of churches, or, in miniature, the "needles" of the Alps ; and shrubs and creepers cling in its clefts, and festoon its sides. At a little distance in the rocky side of a neighboring hill yawns a huge grotto, from the roof of which hang long stalactites. Near by is a "natural bridge," beneath which foams a brook or rivulet, which, after a series of cascades, loses itself in a dark ravine. The cliff, crowned with the temple, is in part a work of art ; the lake at its foot supplants a filthy slough ; the grotto is mined and blasted out of the solid rock ; the stalactites were brought by rail from limestone caverns, I forget where ; the natural bridge and the ravine are the handiwork of man ; and the torrent flows from the water-pipes of Paris : yet all is done so well, the effects have been so successfully studied, and the strong natural features of the ground used to such advantage, that the result is a masterpiece of landscape-gardening. Masses of rhododendrons, laurels, and other evergreens, soften into the picturesque the harsh aspects of the rocky foreground ; and the grassy slopes of the surrounding hills are varied by groves and belts of shrubbery. I stop, not because there is not a great deal more to say, but because I have already said too much. I have barely touched a subject, which, treated in all its phases, it would be difficult to exhaust. F. P.

PARIS, Feb. 2, 1869.

Do not omit to label your newly-planted trees. The nursery-man will not do this so as to last forever : he has done all he can be expected to if the trees reach your hand marked rightly ; and, when planted, they should not only be permanently labelled, but registered in a book ; so that if every label were removed, the varieties would still be known. A plan of the orchard, with the name and position of every tree exactly marked, will be of great interest, and, with the register, will be of much value in forming your plans for the improvement of the orchard.

MASSACHUSETTS HORTICULTURAL SOCIETY. — We give below the remaining portion of the report of the Fruit Committee, which we commenced last month : —

“*Currants.* — La Versaillaise has uniformly taken the first prize, and is first on the list. Red and White Dutch are still standard kinds. In view of the growing scarcity of this health-giving fruit, and its enhanced price in our market, our culturists would do well to extend their plantations ; remembering to provide a generous supply of manures retentive of moisture, cultivating the ground as carefully as for pears, and guarding against all approaches of the currant-worm. Nearly all our gardens are infested by this pest. The eggs of this worm are deposited singly on the branches, and near the buds. As soon as hatched, the worm penetrates to the pith, upon which it feeds, until the month of June, when it escapes as a moth to deposit another batch of eggs. It is manifestly impracticable to reach the borer when burrowed in the stem, secretly destroying the heart of the bushes ; but it has been asserted that the applications of air-slacked lime, plaster, ashes, or even superphosphates, and whale-oil soap, upon the foliage and stems of the bushes, have been found to be destructive of the pest. Without having had experience, we suggest that these remedies are probably effectual only against the winged moth, which appears about the middle of June ; and she may be prevented from depositing her eggs, either by the offensive odors, or by the gritty dust of the lime and plaster, which is fixed by the dews. Whether these remedies are effectual or not, of this we are confident, — that good culture will insure good results.

“*Raspberries.* — Knevett's Giant is still the leading and the prize kind. Clarke has fruited with us, and is regarded as very hardy, vigorous, and promising ; but its qualities can be more definitely determined another season. The Philadelphia will never appear as an exhibition fruit ; and its size is much against it as a market-fruit. Its marked productiveness and hardiness will commend it to many. Will not the increasing scarcity and the very high price of the raspberry in the Boston market induce many to attempt the supply of this want ?

“*Blackberries.* — On the 8th of August, Mr. R. R. Fletcher exhibited the Wachuset Blackberry, which is called thornless. It is similar in shape to the Dorchester, but not as large nor as sweet, though the specimens exhibited were not quite ripe, and probably not the best of the kind. It is claimed to be very productive and hardy. It cannot be said to be thornless, yet the evil is essentially mitigated, in comparison with common kinds. On this account, it deserves trial. The culture of the older kinds is decreasing ; but newer varieties bid fair to increase the interest in this fruit. Neither the Kittatiny, Wilson, nor Missouri Mammoth have been exhibited ; and we can form no opinion of their merits. The interest in these fruits is by no means as extensive with us as it is in the vicinity of New York and Philadelphia. Indeed, it would seem that the enthusiasm of that section was beyond the bounds of moderation. There is a limit in the amount which can be cared for, which limit was exceeded by many fruit-growers in New Jersey the past season ; large quantities of strawberry and other small fruits being allowed to perish for want of pickers. Notwithstanding the positive assertions of those who have the plants to sell, there is also a limit

to the demand in our markets, which limit was passed this season in New York, when strawberries were dull at eight cents per quart at wholesale. With the present price of labor, they cannot be produced for any such sum. The cultivated blackberry, however, is not at all likely to be so abundant as to overstock the market. It is also to be borne in mind, that the system for distributing fruit to consumers is by no means perfect, and that an absolute dearth may exist in many places, while a glut may occur in other sections, for want of facilities in picking, forwarding, or selling to consumers at any thing like the wholesale rates.

"*Gooseberries.* — The Mountain Seedling was first among American kinds. Very fine English Green Gage were exhibited by Mr. G. A. Godbold, showing what are the possibilities with this fruit.

"*Pears.* — The early kinds, Madeline and Doyenné d'Été appeared Aug. 1. Beurré Giffard took the first prize Aug. 15. Rostiezer was best Aug. 29, and again superior Sept. 5. Clapp's Favorite was also superior on this day: and its value and excellence is fully confirmed. It must be picked early, decidedly earlier than the Bartlett, and invariably ripened for ten days in the house, in order to obtain its good quality. At the annual exhibition in September, the collection of pears was large and fine, a credit to any State or country, though, perhaps, not equal to what we have seen in former years. Among the most attractive varieties, and of superior quality, we may name the Bartlett, Clapp, Duchesse, Sheldon, Mt. Vernon, Bosc, Beurré Hardy, Seckel, Louise Bonne, Beurré d'Anjou, Swan's Orange, Superfin, and Beurré Clairgeau. A seedling pear, from Albert Bresee of Vermont, much resembling the Glout Morceau, and yet fully ripe Sept. 19, is worthy of trial.

"At the monthly exhibition, Oct. 10, the best single dish of pears was the Sheldon; Urbaniste was second, and Beurré Bosc was third. For winter pears, the award was made Nov. 14; the first prize being taken by Caen du France, the second by Lawrence, and the third by Beurré d'Aremberg. The Mt. Vernon of Messrs. Walker was also very fine, equal to any specimens we have ever before seen. Dr. Shurtleff's Seedling Pear, Gen. Grant, was again tested. It is of fair quality, a little coarse, and with a slight tendency to rot at the core. Its large size and fine appearance may make it desirable. We need only add, under this head, that each season confirms the opinion that the pear is at home in Massachusetts.

"*The Apple.* — We are glad to report an excellent crop of this most important fruit. It is true, our orchards have sadly diminished in the eastern portion of the State within a few years; and many of those which remain have been seriously and, probably, permanently injured by the ravages of the canker-worm: yet this last evil has been less felt than usual during the past year. While this is a source of congratulation to the negligent, the diligent orchardist rejoices in the health and vigor of his trees, which, by his care, have been kept in thrift, and which now yield a return reminding us of the abundance of the past. There can be no doubt that our soil and climate are eminently fitted for the growth of the apple in its highest state of excellence. It is to be regretted that the returns from this crop require so many years, such long and patient waiting, that young

men in this age of rapid enterprise are deterred from embarking in this culture. It is true that an abundant reward may be expected to follow a judicious culture on land not held at high prices, even during the lifetime of the planter. Still it is also true that he will get but a moiety of the crop, at the most : the best part of his orchard, if properly cared for, will be left for the succeeding generation. It is for this reason that it may be worthy of consideration whether the State should in some way encourage the plantation of the apple, as it may also of forest trees. Can there be a doubt, that it would result in public gain, if generous and permanent prizes should be offered by the State and by our societies for extensive and well-kept apple-orchards, as well as for the products? In this connection it is to be remembered that the Paradise stock has done very much in mitigation of this difficulty of time. The dwarf apple is indeed a great acquisition for family use, performing the same office for this fruit as the quince does for the pear. It will require the same care, the same regular and full supply of food, constant watching lest the top should outgrow, overtax, and overload the root; but, with this reasonable care, it will give equally as satisfying and bountiful results. No sight in the fruit-garden can be more beautiful than a well-formed and evenly-loaded dwarf Astrachan, or Williams; the highest fruit being within easy reach from the ground. While the standard apple, when in its prime, produces such immense quantities, and the price consequently rules low, we do not attach the same importance to the dwarf apple that we do to the dwarf pear; still it is of far more value to small families than is generally supposed. It develops early, within two or three years from planting; it gives a moderate, a *family* supply of each kind; it occupies but little room in the garden; and its size renders it comparatively easy to protect it from disease. For all small gardens, we would advise the planting of dwarf apples, at least of the early varieties, for family use, until the winter kinds can be purchased in quantity at low rates.

“ The first exhibition of apples was on the 8th of August, at which time there was a good display of the early standard kinds, — the Harvest, River, Astrachan, and Williams. From this time, throughout the season, and especially at the annual exhibition, the display was extensive, and excellent in quality. Williams was first for summer, Gravenstein was first for fall, and Northern Spy was first for winter. The excellence in quality, and the superior specimens of the Spy, overcame its low point of unproductiveness and other undesirable habits for general culture. Specimens of Grimes’s Golden Pippin were exhibited Dec. 5, which were of fine appearance, and the quality was very agreeable. We regard it as promising.

“ *The Grape* — All will agree that the season has been extremely unpropitious for this crop. Still we have had a fair exhibition of this fruit on our tables, and many fields have yielded a moderate return from the more hardy varieties. Some marked instances of success have been noticed. Messrs. Davis & Bates, and also Mr. S. G. Damon, have exhibited fine collections, including the more tender and difficult varieties; illustrating the advantage of close fences for protection. The grape does not flourish with that spontaneity that we notice on the shores of Lake Erie, or the Ohio River. We do not propose to compete, when

we receive grapes from the West which are sold at the rate of a hundred to a hundred and sixty dollars per ton, as has been the case in the Boston market this fall. Neither is there any occasion. Our fruit is generally in better condition for retailing: it comes to the market before the heavy glut from the West comes on; and the lowest price, the past autumn, has been twelve dollars per hundred pounds, at wholesale, for Concords of fair quality. This result has been attained when the season has been precisely the reverse at the West, and unusually favorable for the grape. We may say again, in view of these facts, there is no reason for discouragement. There is need of care and judgment; but we do not admit less confidence than in former years. With varieties we must exercise extreme caution.

“ On the 11th of September, the first grapes were exhibited; Daniel Clark showing a very fine dish of Concords, as before noticed. Their early maturity was undoubtedly owing to the radiated heat of the rocks over which they were trained. Gen. George H. Gordon of Framingham exhibited on this day very fine clusters of ripe grapes, calling for a name. They resembled the Hartford, but were very superior, if, in reality, they were Hartfords. The majority of your committee do not entertain a doubt that the Framingham, so called, is identical with the Hartford, or else a seedling so closely resembling its parent in quality and habits as to be undeserving a separate name. The exhibition of fruit of the ‘Main’ Grape confirms our previous opinion that it is the Concord. There can be no doubt of this; and though the persistent sale of an old variety under a new name is a very plain question in ethics, yet the Concord has such sterling excellences, that the public suffers less, in this case, than with a majority of really new kinds.

“ Israella and Adirondac took the prize, Sept. 11, as the best early grapes on exhibition. Different cultivators entertain precisely opposite opinions respecting the Adirondac. With some, it is too tender for the winter, too subject to mildew, and, in quality, lacks character; but, in positions which are favorable, the quality must be allowed to be very agreeable, and it is not strange, that, in such cases, it should be pronounced the best early grape.

“ At our annual exhibition, the display of grapes was good, though not equal to many seasons. We confine our report to the comparatively new kinds. Stephen Underhill of Croton Point, N.Y., exhibited seedlings which deserve special attention, on account of their fine appearance and superior quality. A white grape, a cross of White Chasselas with Delaware, somewhat resembling the Rebecca, is evidently early, very sweet, and of good quality; and is said to be hardy, vigorous, and productive. Another cross of Concord and Chasselas much resembled White Frontignan in the appearance of bunch and berry. The quality was brisk, juicy, vinous, and, if fully ripe, we should say superior.

“ Another cross of Concord and Black Prince resembles the latter, is firm and crisp, but probably too late for us. Another of the same parentage, not quite so large, with long and shouldered bunch, was brisk, juicy, and good, resembling the Prince in quality; and appears to be fully as early as the Concord. Yet another, from the same, was dead ripe, and doubtless is as early as the Hartford. It was sweet, juicy, with a slight Catawba aroma, and though some of

the others may exceed it in quality, yet it will rank at least as "very good;" and, on account of its earliness, it may be the most promising. Mr. Underhill is an experienced cultivator and a careful observer; and his commendation of the habits of these products of his careful experiments is an assurance that we may hope for varieties of permanent value from these unusually promising seedlings. Arnold's Hybrids, black and white, long, loose bunches, berries small, having, to a considerable degree, the characteristics of the Clinton, which is understood to be one of the parents, — these were exhibited by Rev. W. H. Wilcox. Our season has been unfavorable for them, and probably they were not fair specimens. The introducer of the Walter Grape exhibited a beautiful case of this fruit. The bunches and berries were larger than our best Delaware, of which we had superior specimens. The quality was not quite equal, not so tender as Delaware, but still very good. We can form no opinion as to its time of ripening and its habits, as it is understood to be carefully guarded, and not brought into comparison with other kinds. If it shall prove to be early, hardy, vigorous, and productive, it will be valuable.

"Mr. James Cruikshank again exhibited the Fedora, a seedling of the Chaselas type, which he regards as more capable of enduring our climate. It has been cultivated in Chelsea for some years past. This year was a severe test for it, and its appearance was creditable under adverse circumstances. N. B. White exhibited a seedling resembling Rogers's No. 4, not ripe, but large, and sweeter than was expected. This may improve in a favorable season, and is worthy of careful trial. As before stated, some fine bunches of the Delaware were exhibited, especially those of Mr. W. H. Barnes. The vines of Mr. S. G. Damon, of this variety, were healthy, and remarkably well loaded with clusters. Still, we can only recommend the Delaware for positions having the shelter of buildings, or of high, close fences. A small bunch of Eumelan was received from Dr. Grant, Oct. 7. It was well set, with black, round berries, of medium size; skin thin, but of much strength; pulp melting, moderately juicy, a very agreeable sub-acid with no foxiness, but not of high flavor. Its value depends upon the three essential qualities for our climate; namely, health, earliness, and productiveness.

"Foreign grapes were in good supply, and of good quality at the annual exhibition; but there has been a decided lack of forced grapes. This decline in interest is to be regretted, since there is no fruit which is more easy of culture, and none other which attains to the highest excellence in quality, under glass.

"We call attention to the award of the special prize of sixty dollars to Messrs. F. & L. Clapp, for the best seedling pear, the 'Clapp's Favorite,' after a trial of five years."

IN summer-pruning grape-vines, if the laterals are wholly cut out, it will be apt to cause the buds on which the next season's crop depends to push this summer, to the great injury, if not the total loss, of the crop. The laterals should have at least one joint left; and perhaps it would be better not to stop them at all, as they are intimately connected with the organization of the buds at their base. American vines will not bear the close summer-pruning given to the grape in Europe.

NEW PLANTS. — We copy from "The Floral World" the following notices of new plants: —

"*Eucalyptus globulus*. — This beautiful species of Australian gum-tree has been in cultivation in this country half a century, but has been known only in a few botanic gardens as a curiosity. But it is so elegant in appearance, and so well adapted to the embellishment of English gardens, that it merits to become a favorite wherever such as are called 'sub-tropical' plants are cultivated. Like many other such things, this is *not* a sub-tropical plant, as it thrives in the



EUCALYPTUS GLOBULUS.

coldest parts of Tasmania, where grapes and olives never ripen. It is a tree of rapid and gigantic growth, requiring the shelter of a cool conservatory in winter, and well adapted for a conspicuous position on the lawn during summer. We are indebted to Messrs. Hooper & Co. of Covent Garden, who offer plants and seeds of this *Eucalyptus*, for the opportunity of figuring it.

"*Ophrys insectifera*, var. *aranifera*, Spider Ophrys (Bot. Mag., t. 5712). — Orchidaceæ. A pretty terrestrial orchid from Mentone, and the one which Linnaeus regarded as the typical form of that group of *Ophrys* which includes the lesser and common spider, the bee, and the drone, amongst British orchids.

"*Hypericum patulum*, Spreading St. John's-Wort (Bot. Mag., t. 5693). — Hypericineæ. A handsome hardy perennial, native of Japan, flowering in autumn, and forming a very valuable addition to the list of available border-plants."

"*Angelonia grandiflora* (Large-flowered Angelonia). — A pretty scrophulariaceous plant from South America. It is of most elegant habit, freely branching, with lanceolate leaves, and showy spikes of purplish-blue flowers, which are delightfully fragrant. It may be easily raised from seeds; and, though usually



ANGELONIA GRANDIFLORA.

regarded as a stove-plant, warm greenhouse-temperature will suit it in the winter, and it may be planted out in the summer months. For this, also, we are indebted to Messrs. Hooper & Co., who have re-introduced the plant to cultivation."

"*Aristolochia Goldicana*, the Rev. H. Goldie's Aristolochia (Bot. Mag., t. 5672). — A remarkable stove climber from South America. The leaves are cordate on long stalks; the flower is bent into two unequal portions: the lower

portion surmounting the ovary about eight inches in length; the upper portion a foot long, funnel-shaped, and dilated into a three-lobed limb. The whole



ARISTOLOCHIA GOLDIEANA.

flower is of a pale green, with brown stripes, richly mottled inside with brown and orange.

“*Dalechampia Roezliana*. Roezl’s *Dalechampia* (Bot. Mag., t. 5640). — Euphorbiaceæ. Amongst the many meritorious novelties of the past season, none is more deserving the attention of cultivators than this beautiful Mexican plant. It was first met with in Vera Cruz by Roezl; and, according to the absurd practice of naming plants after persons, it bears his name for a specific distinction. *Bougainvillea* and the *Euphorbia*, in both of which the most highly-colored portions are not the true flowers, but their appendages. There are two varieties of *Dalechampia Roezliana*. — one with green, the other with pink bracts. It is the last named that we especially recommend to the favorable consideration of cultivators. One of the most interesting features in the numerous admirable exhibitions of the plant by Mr. Bull of King’s Road, Chelsea, during the past season, was the perfection, in respect both of leafage and richness of floral coloring, of the very small specimens that were brought forward. It does not need a vast It is a member of the vast order *Euphorbiaceæ*, and belongs to that section of the order the plants of which have broad cotyledons. The genus *Dalechampia* is characterized by the presence of a single ovule in each compartment of the ovary, by the anthers being erect in the bud, by the segments of the calyx in the male flowers touching their margins, and by the two-leaved involucre enclosing flowers of both sexes. These involucre, or (as they will, no doubt, be more commonly called) ‘bracts,’ are, in the plant before us, of a bright pink color: the male and female flowers which they enclose are yellow. As respects the peculiarity of its decorative features, therefore, this plant may be classed with the

extent of space, or a great length of time, to grow this plant to perfection; indeed, it blooms freely in a small state at every period of the year: and the colored bracts are so persistent, that the plant retains its brightness of coloring for a great length of time. In habit it is an erect-growing under-shrub, with subcordate or spoon-shaped acuminate leaves five to nine inches long; the stem is clothed with egg-shaped stipules; the peduncles are slender and thread-like, bearing two small green bracts and two large cordate denticulate floral leaves of a bright pink color. Within these are the male and female flowers, of a pale yellow color. This is a highly ornamental plant, which may be grown to a large and grand specimen for the stove, or flowered in a small state for the decoration of the table. As it can be flowered at any season, it may added to the list of select winter-flowering plants; for, at this season of the year, its gray bracts will be of far greater value than at any other time. As a winter-flowering plant, it will need the stove; yet it may certainly be grown and flowered successfully with only warm greenhouse-treatment, as, though a stove-plant, it happens to be well adapted for what is termed cool treatment.

To the Editor of "Tilton's Journal:"—

IN the Journal for February, your correspondent "Robert Watt" refers to the unusually large number of vines that died in the winter of 1868, giving as his opinion, that such loss was caused by the houses not having sufficient ventilation. I have under my charge two vineries; both are fitted with hot-water pipes; one is used for forcing, the other as a late-house: the vines were pruned in the fall of 1867, and looked as well for a crop of fruit in 1868 as they had done for fourteen years. The borders were covered as they had been with leaves from the woods, and meadow-hay. I began to force in January, 1868; the buds swelled and burst well, but were slow; they made from fifteen to eighteen inches of young wood. About this time (last of March) the late-house was started, and bursting into leaf; there was a succession of cold rain-storms, which, with the melted snow, penetrated through the covering of the border. It is my opinion that so much cold snow-water killed the young feeding roots. The vines began to die, shoot after shoot, till within a few feet of the sill. The houses were both opened on every pleasant day. I let heat enough into the late-house to keep the pipes from freezing: so that there was not more than ten or fifteen degrees of frost in the house all winter.

If my conclusion is correct, the only safety there is for us, is to have the border covered with close-fitting shutters, that can be removed in the summer. The vines in the forcing-house alluded to above were taken out, the border renewed, and young vines planted.

I have been expecting that this subject would have been taken up by some abler pen than mine: it is a subject of some importance to grape-growers, and I hope others will give their experience, so that we may find the true cause of the unusual loss of vines in grape-houses in the winter of 1867 and 1868. As soon as the weather became warm and settled, the vines in the late-house started from spurs on the lower part of the cane, and made a strong growth.

HOW TO TURF A CROQUET-LAWN. — At the present day, when a good croquet-lawn is as necessary an appendage to a house in the country as a bowling-green was in the last century, the question is often asked, Which is the best way to turf it? The easiest and commonest one is to pare off the grass from a wayside waste, or a common, or a sheep-walk on the hills, and lay it down. Another is to clean the ground, and sow it with grass-seeds. A third is to use the turf that is found growing on the spot, where a piece of the park or a paddock is enclosed, or to take some from an adjoining pasture-field. Now, where I have seen the first plan adopted, — that of laying down turf from a common, — there has been for the first following summer a very fair lawn; but, in the course of time, the seeds of plantains, dandelions, thistles, and other weeds, have sprung up, and stifled the grass. The second plan — that of laying it down with seeds — is undoubtedly the best for an ordinary lawn; but where the proprietor cannot wait for two or three years, but is desirous to play on it in a few months, this is not advisable. On the whole, I am inclined — upon, I allow, a very limited experience — to prefer the third plan, — that of using the turf we find on the ground or in the immediate neighborhood. If this is pared off thin, the coarse, long-rooted plants, such as docks, cow-parsnips, thistles, and dandelions, will be cut off, and can be easily picked out and burnt, and their remains forked out in digging the ground and levelling it; while the real grasses and clovers will remain uninjured, and with rolling, mowing, and a liberal dressing of ashes, form an excellent croquet-lawn by the next summer. I have known people go to a great expense to cart down turf from the top of a hill, and the money thrown away. The delicate air and festuca, as soon as they were transplanted to the richer mould below, have dwindled and disappeared; and plantains, that were small and unnoticed before, have usurped their place, and covered the ground like a scab.

As croquet is becoming more and more a man's game, and is played with heavier mallets, a much larger lawn is now required for it than when it was regarded as merely a pastime for young ladies and children, and when any little corner of the garden was good enough for it. — *Gardener's Chronicle*.

STATICE HOLFORDI PROPAGATION. — It is propagated by cuttings, the side crowns being taken off close to the stem, and with a sort of heel. The base of the cutting is pared smooth with a sharp knife, and a few of the leaves are trimmed off to admit of its being placed in the soil. The cutting-pot should be well drained, filled to within an inch of the rim with sandy peat, and then to the rim with sand; and the cutting should be inserted in the centre. It is well to place the cutting-pot in one of a larger size, and to fill the interval between the two with small crocks to near the top, and the remainder of the space with silver sand. The rims of both pots should be level. That will allow of a bell-glass being placed over the cutting, and resting on the sand between the pots. Give a gentle watering, and plunge in a bottom-heat of from 75° to 80°, and a corresponding top-heat; being careful not to make the soil very wet, but yet to keep it moist. Shade from bright sun, take off the bell-glass occasionally, and, after wiping it dry, replace it. When the cutting begins to grow, tilt the glass a little

on one side, and by degrees remove it. The best plants of statice are obtained from seed; such being more free in growth, and less liable to die off, than plants from cuttings.

THE following article on figs, which we abridge from "The Florist," gives much information about a fruit which receives too little attention:—

A SELECTION OF CHOICE FIGS. — Variety is especially required in a collection of figs, in order that the fig-house may furnish fruits suitable and agreeable at all times and to all tastes. There is to be found amongst figs abundance of variety, whether we judge by size, color, flavor, hardiness, fruitfulness, or season of ripening. I propose to give a selection of the most prominent varieties, having regard to the foregoing points.

Size. — Some figs are very large, while others are very small; and some prefer the one, some the other. *Grosse Verte* and *Brunswick* are the two largest figs we have fruited here. I have seen very large fruits of *Castle Kennedy* exhibited; but I have not yet fruited this variety. *Black Provence*, *Trois Récoltes*, and *De Lipari*, are the smallest.

Color. — Some figs are in appearance more tempting than others. There is a great range of color amongst them; some being so pale that they are termed white, others so dark that they are called black. There are, however, none either white or black. One of the palest-colored figs is *De la Madeleine*, which is of a clear pale yellow; another is the *White Marseilles*, which is pale green. *Col de Signora Nera*, *Bourjassotte Noire*, and *Black Provence*, are good examples of the dark-colored varieties, — dark violet they may be called. Of green-fruited sorts, the most striking is *D'Agen* and *Grosse Verte*; of tawny brown, *Turkey*, *Brunswick*, and *De l'Archipel*; and, lastly, the striped-fruited fig (*Figue Panachée*), which is really very handsome, being beautifully striped with deep green and pale yellow.

Taste, or Flavor. — This is always a ticklish subject, taste being so varied, and varying so much. — one's own individual taste, that is; one day liking one thing, the next day something else, just as our health, or perhaps our temper, may stand affected. Some prefer what they term mildness in the flavor of fruits: this to me is mawkish insipidity. I prefer briskness in figs. — sugary lusciousness, which is found in well-ripened fruit of such varieties as *Col de Signora Blanca*, *Col de Signora Nera*, *Grosse Verte*, *Bourjassotte Grise*, and sometimes, although not quite so constantly, in *White Ischia* and *Black Provence*. Again: figs themselves vary much in flavor, according to the situation or conditions under which they may be growing. Herein lies the charm of growing a number of varieties in the same house. Some of the higher-flavored sorts require great heat and bright sunshine to bring them up to full perfection. It may happen that these conditions cannot be fulfilled: the weather may be dull and sunless, and more heat may be required than can be given conveniently. Then some of the second-rate sorts will surpass them in flavor. The little *White Ischia* is very fickle in this respect: the fruits of to-day are excellent, those of three days hence watery and tasteless. *Bourjassotte Grise* is the most constantly

good variety under all conditions that I have found. White Marseilles comes second, although it is never very rich.

Hardiness. — This is a point of the utmost importance. It is exceedingly important to discover what are the varieties most suitable for cultivation in the open air in this country. I have not yet had time to prove much in this respect. The county of Sussex, as is well known, is famed for its fig-trees. In the gardens at Arundel Castle, the White Marseilles, called there White Geneva, succeeds admirably as an open standard. I have eaten some exceedingly good fruit of that variety grown on these trees : and I am told, that, in some of the warmest seasons, they ripen off two crops of fruit ; but this is rather unusual. The Black or Blue Ischia is the next hardiest variety that has been proved ; then, on walls, Lee's Perpetual or Brown Turkey ; and, lastly, the Brunswick. These four constitute the whole of the stock of hardy figs I have met with suited for open-air cultivation. It must be borne in mind that our seasons are far too short to allow of the fig producing more than the first crop of fruit. Almost all the fruits that ripen out of doors in this country are produced on the shoots of the former season's growth : therefore I think all varieties that produce their crop in this manner will prove suitable for open-air cultivation. I know of only two others that are possessed of this property of "first bearing" (as it is called in fig countries), which I can recommend for cultivating in the open air : they are Grosse Monstrueuse de Lipari and De la Madeleine, both of which bear a good first crop, and very rarely the second.

Fruitfulness. — As a general rule, the smallest varieties are the most prolific. Of these, White Ischia, Black Provence, and Œil de Perdrix, bear fruit as profusely as an ordinary gooseberry-bush. Some others, again, although they may never seem so laden with fruit at any one time, yet, through bearing continuously, produce an immense quantity during the course of the season. Of these the most prominent are, perhaps, Brown Turkey or Lee's Perpetual, and White Marseilles.

Season of ripening. — In order to keep up a rich and varied supply of the choicest fruits, the varieties must be selected according to their various seasons of ripening, so as to avoid a glut at one time, succeeded by a scarcity. When a house is devoted to the cultivation of the fig in pots, and the collection is limited to, say, fifty plants, the following is my selection of varieties ; and these will (supposing them to be started in March) keep up an almost continuous supply of ripe fruit from the end of June to Christmas. They are put into groups, showing how they will give a supply of fruit for each month. *July.* — White Marseilles, De la Madeleine, Grosse Monstrueuse de Lipari, and Lee's Perpetual. *August.* — White Marseilles, Lee's Perpetual, Versailles, De Lipari. *September.* — White Ischia, Grosse Violette de Bourdeaux, Black Provence, Grosse Verte, Bourjassotte Grise, Col de Signora Blanca, De l'Archipel, and the second crop of White Marseilles and Lee's Perpetual. *October.* — White Ischia, Black Provence, Grosse Verte, Bourjassotte Grise, Col de Signora Blanca, and Col de Signora Nera. *November.* — White Ischia, Grosse Verte, Lee's Perpetual, D'Agén. *December.* — White Ischia, and D'Agén, which is the latest of all.

PLUMS. — *The Chickasaw*. — In the April number, I see an inquiry whether the Chickasaw Plum is hardy enough to stand our winters at the North. In February, 1868, while at the meeting of the Northern Illinois Horticultural Society at Freeport, I saw the Chickasaw trees in the gentleman's garden where I was stopping; and he said they were quite hardy in that latitude, $42^{\circ} 20'$; that they were abundant bearers, fruit large, not very good quality, but answered a very good purpose for cooking, preserving, &c.; not infested with the curculio. This last quality may be from its toughness, or peculiar flavor of the skin. The following spring, I sent to Mr. D. Wilmot Scott of Galena, Ill., and got some Chickasaws, also some of the Miner plum-trees, which originated near Galena.

Two years ago this spring, my friend Charles Hovey of Minneapolis sent me a native plum of Minnesota, which he said they were cultivating in that Northern country. Some of these latter are now (May 5) blooming very full.

In these three varieties, I do not expect any thing but a second-rate culinary fruit. Twenty-five years ago, we could go out in our native wild-plum thickets about here, and find some varieties quite palatable.

The great object with our plums is, to protect them from the curculio. Capt. James Matthews of Knoxville, Io., the worthy president of our State Horticultural Society, has succeeded in protecting his plums from the curculio, by jarring the trees a few days after the insects begin their attack, and getting them all down upon the ground; then carefully spreading all the surface of the ground over, turning the surface all to the bottom of the spading, and patting it down smoothly with the back of the spade, leaving no holes for the insects to crawl out, and they are prisoners for life. This he has successfully done for several years, and done it upon alternate trees in the row, saving a full crop on the trees thus treated, and losing all the crop on the trees not so treated.

Others, I believe, have been successful by spreading a coat of fresh horse-manure under the plum-trees about the time of blooming, and letting it remain until after fruiting.

I have ten plum-trees of choice varieties, young and thrifty, full of bloom now, which I intend to enclose with a pig-pen fence, and put in a flock of pigs to wean, trusting them to keep their yard clear of curculios.

The hog is a very good gleaner of insects. I have large apple-orchards, in which I sow clover after the trees come into bearing, then turn in hogs to pasture on the clover, and eat the early fallen apples, nearly all of which contain worms. Before I turned the hogs into my orchards, the canker-worm appeared; but I have not seen any since. I do not know that the hogs will protect an orchard from the canker-worm; but I believe if there are hogs enough, and they are fed with corn or other grain under the trees, they would protect them from the canker-worm. Some one said in "The New-York Farmers' Club" when we sent them a box of very beautiful Iowa apples, last winter, that they used to raise fine and fair fruit down East, when the country was new, and free from insects. My friends, we are by no means free from insects here at the West. The truth is, we can beat the East on beautiful fruit, and have always done it, at fruit exhibitions.

Suel Foster.

AMERICAN SEEDLING POTATOES IN ENGLAND. — With regard to some of the more recent American seedling potatoes, W. F. Radclyffe, an English writer, makes the following statements: "The editors of 'The Gardener's Chronicle' (London), having kindly forwarded to me four American seedling potatoes as packed up in America, the following is my account of them, as far as I could form an opinion of them by eyesight only. The potatoes arrived perfectly fresh. The four sorts sent were the Early Rose, Climax, Bresee's No. 4, and Bresee's Prolific.

"The Early Rose is quite distinct from any European variety that I have ever seen. It looks more like the Salmon Kidneys than any other of our varieties; but the eyes (small, like mole's eyes) are fixed on promontories; whereas the Salmon Kidneys have deep eyes, and are not so well formed. It appears to be an early potato, and I should say a great cropper; sure to be a favorite with poor people, and probably may obtain with the 'upper ten.' It is of a dull rose color; its flesh is white, with a purple streak, which portends quality. More I cannot say at present; but all that I can say conscientiously in its favor, after trial, I shall be pleased to do. I say the same of the others. I never allow prejudices to have the least ascendancy over me. It is unworthy of noble Englishmen to run down 'externs' when they are deserving of our praise.

"Climax is, like the former, many-eyed, but deep-eyed; a round, long potato, somewhat yellow in its flesh, and occasionally hollow: it will, at least, make a good cottager's potato. Soil makes a great difference in the color of the skins and flesh of potatoes.

"Bresee's No. 4. — This, so far as appearance goes, is a tuber 'to see once, and dream of forever.' It is a squarish oblong flattened round, or flattened square with the edges rounded off; the eyes are but little depressed; the skin is white and smooth; and the flesh is white and firm. If the flavor is good, it will take the highest place among non-kidneys. It obtained a certificate from the Massachusetts Horticultural Society, as did also the next. The tubers have been sold at a fabulous price in the United States.

"Bresee's Prolific is a most perfect potato: I think it is one of the best that I ever saw. Its eyes are less depressed than those of the former. I could not find a fault with it, except that, in a friendly way, its skin might be a little whiter. Its flesh is white and firm. It looks like an earlier sort than the former. As far as appearance goes, they do immense credit to America. In a word, I never saw nicer potatoes. It is difficult to describe the shapes of potatoes exactly. I should call Prolific an oblong flattened round. Till I see whether the crops of these potatoes are uniform, I must pause before I can fully praise."

It is somewhat remarkable that the pear, though requiring more careful cultivation than the apple, is in its different varieties much less restricted as to locality. The best kinds of pears in Europe are generally the best in America; while the number of European apples which succeed in this country forms a small minority. Yet, among this limited number, the Red Astrachan is popular throughout the country. We doubt whether there is an American apple that succeeds so universally, north and south, east and west, as this Russian variety

THE EARTH ALMOND, OR CHUFA. — We are inclined to believe that the merits of this vegetable are not generally appreciated. From statements recently published, it appears that from poor, sandy soil, yielding less than a dozen bushels of corn to the acre, a hundred bushels and upwards, of earth-almonds can be easily obtained. The ground should be ploughed to the depth of eight or ten inches, and afterwards harrowed till well pulverized. The tubers are dropped ten inches apart, in drills two or three inches deep. The drills need not be more than fifteen or eighteen inches apart, though, for greater convenience in cultivation, they are often marked off two and a half, and sometimes even three feet asunder. If planted the last of April or early in May, the crop will be ready for harvesting the middle of October.

The plant is really a tuberous-rooted rush, with the grass-like habit and appearance of the rush family. The leaves are produced in great abundance, and are about two feet in length.

In the Middle and Southern States, the crop, while in full growth and vigor, is sometimes cut as grass, and, if properly dried, makes a description of hay which is peculiarly sweet and fragrant. This hay is much relished by horses, and is said to be preferred by them to that made from red-top or timothy. After mowing, the plants soon begin to grow anew; and the crop of tubers is not materially, if at all, diminished by the treatment. In the Northern and Eastern States, this course could hardly be advised; for, where the seasons are comparatively short, the plants should be allowed their full, natural growth. Managed as described, we have not learned that the crop has ever failed even in New England. We ought perhaps to add, that, in warm climates, the tubers remaining in the ground survive the winter uninjured, and, springing up the following season, become troublesome; while in cooler latitudes they are completely exterminated by severe frosts.

The uses of the tubers are numerous. They are readily eaten by many kinds of stock, and are excellent for poultry. They have a pleasant, nutty or almond-like taste; are good when roasted; and, if properly cured, keep a long period. When dried and pulverized, they impart to water the color and almost the rich properties of milk. Where the walnut and other descriptions of nuts cannot be readily obtained, children will find in the chufa an acceptable and even agreeable substitute.

F. Burr.

MR. EDITOR, — A young man representing your excellent Journal called on me a few days ago, and I accepted an agency. I felt, in doing so, persuaded that it is just what we want, — a live horticultural journal, devoted to the advancement of that which promotes health and longevity, and consequently brings in its monthly visitations happiness to our firesides. The more we become skilled in the cultivation and production of fruit, the more we scatter the greatest of God's blessings, because we are giving vigor to our physical natures, elements that produce agility and vivacity, and, through an active organization, acuteness of thought and brightness of intellect. We should use less of those agents that tend to muddle and make sluggish the life-currents, and more of those agents which invigorate and quicken them. The American people are beginning to

appreciate the salutary as well as the sanitary influence of fruits, in extending the period of human life, as well as in enhancing the enjoyment thereof during our brief sojourn here. May we not, in the lengthened term of the present over that which belonged to past centuries, when animal food almost alone constituted the bill of fare, attribute somewhat to the influences enumerated, as conspiring to effect the change?

We are entering upon a new era, notwithstanding the progress we have made in the past, in reference to horticulture.

We may say without egotism, that our own State of Illinois is girding herself, through her active pomologists and horticulturists, for a grand march into the regions of Pomona, so inviting and so tempting with russet fruits and toothsome clusters. Egypt is dispelling the darkness, fabled or real, that is said to have long hung over a region in which the goddess now is scattering her gifts in magnificent profusion. More than three-fourths of our State, stretching through five degrees of latitude, is capable of remunerative fruit-culture; and far-seeing men are profiting thereby.

That there may be some evidence brought forward, corroborative of what I have said,—there is an active State Horticultural Society, Northern and Southern Societies, besides many local ones, all active in the promotion of the great benefactions of Nature designed for the welfare and happiness of the human family.

It is one of the greatest of blessings, that all men are not pursuing one branch of horticulture alone; but, on the other hand, one has a taste for grape-culture, another for pears or peaches, another for apples, another still for small fruits, and, now and then, a large-minded man encompasses the whole range; but, usually, the adoption of specialties results in the most sensible advancement in the entire domain of fruit-culture. We have a goodly heritage, and let us all strive, in the great race, to leave some landmarks behind, that the world may know, when we are gone, that we once occupied a place here, generously devoting our energies to ameliorate the condition of our race. *Nahum E. Ballou, M.D.*

SANDWICH, ILL., NOV. 21, 1868.

CENTURY-PLANT FLOWERING. — We learn from our correspondents Messrs. Frost & Co. of Rochester, that a Century-Plant (*Agave Americana*), or American aloe, will flower this summer in their grounds, and is now rapidly throwing up its flower-stem. The plant was procured by the Messrs. Frost, about thirteen years ago, from the greenhouse of the late John Greig of Canandaigua. It was at that time so large as to be inconvenient in a private establishment; and Mr. Greig disposed of it for that reason. Owing to its unwieldiness, the Messrs. Frost have given it comparatively little care; and, consequently, it is not as large now as when it first came under their charge. A year ago, they moved it from one location to another, and during the removal it was jarred considerably. To the rough handling it received then the Messrs. Frost are inclined to attribute its flowering this year. Their theory is, that its growth was checked, and its vital forces diverted towards the culminating and final effort of its existence; for the American aloe expires immediately after it has blossomed. In order to satisfy

himself as to the age of this plant, Mr. E. A. Frost wrote to Mrs. Greig at Canandaigua, making inquiries concerning it, and received the following reply from the manager of the estate :—

CANANDAIGUA, N.Y., May 1, 1869.

Dear Sir,—Your letter of April 30 to Mrs. Greig has been received, and I reply to it at her request. Mrs. Greig obtained the century-plant from Mr. Prince, Flushing, L.I., about sixty-one years since. It was then in a ten-inch pot, and the plant a little over a foot high. You can estimate how long it took to obtain that growth. Mrs. Greig thinks it must have been five to eight years old ; making the plant at this time from sixty-five to seventy years of age.

Truly yours,

SANDERS IRVING.

E. A. FROST, Esq., Rochester, N.Y.

The blooming of the century-plant is of uncommon occurrence ; but it is so only because no one takes any pains in the culture of the plant. As soon as the plant can store up nourishment enough to perfect the flower-stalk, it will bloom.

In its native country, this happens in a few years ; but with us, under greenhouse culture, it takes many years to bring the plant to a blossoming state.

There are many species of Agave ; some very beautiful in foliage : but all resemble each other in flowers.

These plants are now attracting much attention as decorative plants for summer gardening. To all who have never seen the flower, we would advise a visit to Messrs. Frost, if within a reasonable distance ; and to see the flower is worth a special excursion. We shall inform our readers when the plant is in bloom.

We take the following notice from Loudon's "Encyclopædia of Gardening :"—

"It is a native of the tropical part of America, on mountains nine hundred feet above the level of the sea. It has been introduced into warmer parts of the Old World, where fences are made of it, and a fermented liquor called *pulque* : fibre for thread, and a substance analogous to soap, have also been extracted. A plant three years old, six inches high, was planted in 1804 by a Mr. Yates, in Devonshire (Eng.) in the open air, without protection, except what was afforded by the neighboring hills. In the year 1820, it had attained a height of eleven feet, and covered a space of ground of sixteen feet in diameter, when it threw up a flower-stem, which grew for six weeks at the rate of three inches per day, and in September measured twenty-seven feet in height ; its branches being loaded with sixteen thousand blossoms, thus contradicting the generally-received opinion that it only flowers once in a century (whence the name of century-plant).—*McCulloch's Statistics of the British Empire.*

"In the year 1837, a plant flowered at Cornwall (Eng.). In 1806, this plant was taken from a small tub, and planted in the garden. For many years, it was nearly stationary, making but little progress in point of size. About ten years after, the plant began to appear in a more thriving state ; and the next four years it made rapid advances towards maturity. At the latter end of June, when the flower-stem made its first appearance, the plant was seven feet two inches high ; diameter of trunk at ground two feet three inches ; leaves seven feet three inches long, thirteen inches wide, and five to six inches thick near the base. Allowing the plant to be twenty-five years old when turned out, it may be

considered fifty-six years old when it flowered. It was planted in the flower-garden, where it never had any protection except by being screened from the north by shrubbery behind. A daily journal was kept by the gardener of its progress.

“ During the first ten or twelve days it grew from six to seven inches in twenty-four hours ; afterwards it grew slower. On the 1st of July, the flower-stem was eleven feet high ; and by many it was at that time thought to resemble a gigantic asparagus. On the 19th of July, the stem was sixteen feet in height ; and from that period, at about four feet below the top, lateral buds began to make their appearance, which, as the stem grew, formed the peduncles on which the clusters of flowers expanded. On the 1st of August, the flower-stalk was nineteen feet high, when there were thirteen lateral and alternate shoots thrown out. Aug. 15, there were twenty-two peduncles put forth, differing in length in proportion to their age ; the lower ones measuring two feet six inches in length, and bearing on their extremities numerous clusters of flower-buds, these subdividing, and giving space for each individual flower, and measuring across the clusters from fourteen to eighteen inches. At this time, the height of stem was twenty-two feet six inches. On the 7th of September, it attained its extreme height of twenty-five feet, and the number of peduncles was thirty-four, besides a cluster of flower-buds on the top of the stem. The first flower-buds began to expand on the 28th of September, and on the 10th of October the lowermost clusters were in great perfection, and the number on the whole plant was five thousand and eighty-eight, of the color of sulphur, and about five inches in length. The flowers dropped abundance of juice resembling the taste of honey, especially from about nine in the morning until noon. Bees came by myriads, and feasted themselves on the fluid. The gardener put vessels beneath to receive it as it dropped from the flowers, and filled six soda-water bottles with it ; which, being corked a few days, was found to be an excellent cordial. But after a while it fermented, became acid, and acquired an unpleasant odor. During October and November, the stately appearance of the plant, with its gracefully-curved branches expanding like candelabras, and sustaining such a number of erect blossoms and buds, the flowers beautifully succeeding each other, presented to the eye a spectacle highly gratifying. The upper blossoms were in perfection as late as the 24th of December, when a frost terminated the beauty of a plant that will long live in the recollection of its numerous visitors, which amounted to nearly eight thousand. During its progress towards flowering, a temporary roof of glass was erected to protect it from the weather, and underneath, a flight of steps to the platform, twelve feet from the ground, which enabled the visitor to approach the lowermost flowers. T. SYMONS.

“ *Gardener for Sir John St. Aubyn, Bart*

“ CLOWANCE, Cornwall, England, February, 1833.”

CUTTING ASPARAGUS.—A correspondent asks for information as to the proper time and manner of taking a crop of asparagus. Charles M'Intosh, one of the best authorities, says, "The sprouts are fit for cutting when they are about five inches above the surface of the ground. If they are well grown, they will be of a fine green or purple color, firm and compact, and terminate in a close, but not sharp point. In proceeding to cut the sprouts, remove a little of the soil from about the base, and push the knife gently downwards, keeping it quite parallel and close to the shoot to be cut; taking care that none of the buds yet under ground are cut or injured. When the knife is as deep as the base of the shoot, give it a slight twist, pressing it at the same time close to the sprout, and draw it gently upwards, by which process the bud will be separated from the crown.

"Asparagus-knives are frequently made with serrated edges. The wound or cut being ragged in consequence does not bleed so much, and the plants are less weakened. The blade should be quite thin, curved or slightly sickle-shaped towards the point, and about nine inches in length. Being thus formed, it is less liable to cut the underground buds; while the serratures on the concave side more readily catch the shoot intended to be taken off. Many use only a common pruning-knife, especially when the shoots are to be cut near the surface; but the cleanness of the wound leaves the sap-vessels open, and a considerable waste of sap is the consequence.

"In cutting from old, established beds, every sprout, large and small, should be cut. Market-gardeners sometimes sort asparagus into sizes, one, two, and three; the first being the largest and finest formed; the second smaller or intermediate; while all that is quite inferior in size, or any that may have the points of the buds damaged or broken off, are placed in the third, to be used for soups, or cut in small sections, to be cooked in imitation of peas.

"The general gathering continues from four to five weeks, after which a few of the larger only should be taken; the remainder being allowed to grow for the support of the roots and the encouragement of buds for the next season. *All* the shoots are cut, for the reason, that, if a portion were allowed to grow, they would draw too much upon the roots, and thus entirely check the after-growth of the crop, or render the sprouts so small as to be almost worthless.

"The treatment of younger beds or plantations is somewhat different. With these, only a few of the stronger shoots should be cut; and the taking of these should not extend beyond two or three weeks.

"By the 20th of June, the cutting should be discontinued, if the welfare of the future crop is regarded; but, if a bed or portion of a plantation is cut ten days or two weeks longer, it should have a respite the next season, and be allowed to take its natural growth.

"It often happens in cold, late seasons, or in damp, shady situations, that the sprouts come slowly through the ground; and in such cases there is often a number of dry, hard, scaly appendages found attached to the sprouts near their base. These should be carefully removed before tying up for market, or before cooking; but in no case should the skin be peeled off.

"Some, however, allow the shoots to attain a height of seven or eight inches

above ground before cutting, which we think is to be recommended, particularly when the growth is rapid. A much greater quantity is thus obtained, and we think the full flavor of the asparagus is better developed.

“Asparagus may be preserved several days after cutting, if the ends of the bunches are set in a shallow vessel of water, and placed in a dark, cool cellar to prevent the buds expanding.”

MESSRS. VEITCH'S FRUIT-TREE NURSERY. — Fruit-tree nurseries are almost proverbial for their roughness and untidiness. Mud and weeds from them are almost inseparable; yet here is one tidy almost to a fault, every thing is so neat and orderly. The roadways and pathways are all gravelled, and neatly edged with box and other edgings; the trees all so beautifully and so regularly planted, each in compartments by themselves, or nearly so; the ground so neatly dug, and scarcely a weed to be seen, — that, altogether, it is quite a pleasure to visit this fine nursery.

It is not, however, for its neatness alone that I have admired this nursery: that, although much to be recommended, is only as the setting to the jewel; but, if it does not enhance its intrinsic value, it makes it appear perhaps more valuable than it really is. Nothing, however, is required to set off the valuable and excellent collections of fruit and other trees here: they answer for themselves, at least to those who may go to see them, or who may become purchasers. For those who have not the same opportunities I write.

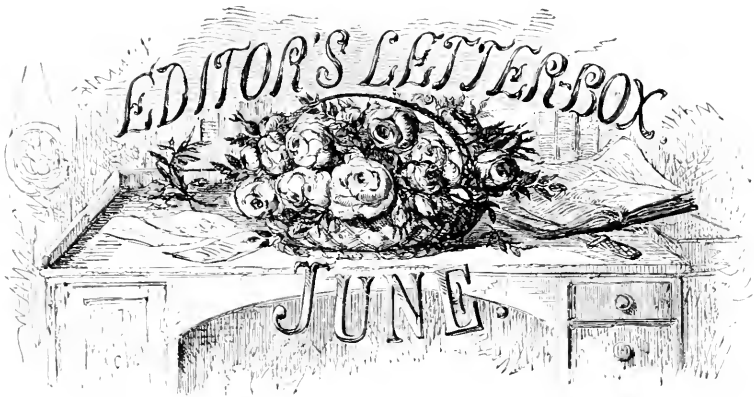
The stock, mostly young, of peach, apricot, apple, pear, plum, and cherry trees, is in very fine condition. Whole quarters are devoted to one particular sort and one form of training. All of the trees are annually removed; so that the roots are ever short and fibrous, and the plants, when sent to their final destination, are but little checked: they may be said to get used to removal. Under this annual-removal system, the shoots, it may be, are not of so great a size as those produced from plants that have not been removed; but they are fifty per cent better. There is a practice in some nurseries in training young trees, severely to be condemned, although it may have the merit of forming handsome-looking trees quickly; that is, the cutting-down strong maiden plants, and training them without transplanting: such trees are little better than rubbish; they never succeed well when finally planted out. In peach and apricot trees, this is especially the case. In selecting young trees of these it is not strength or vigor that should be looked for, but cleanness, firmness of wood, uniformity, and the proper situation of the buds for the future formation of the tree. A quarter of one-year-trained peach and nectarine trees of Messrs. Veitch's, probably two thousand plants, is decidedly the finest I have seen for some time. All the trees were transplanted in the autumn: they are so nice and sturdy, so strong, yet not gross, and so beautifully budded, that, to use a common expression, one could do any thing with them.

The apple, pear, and plum quarters are equally excellent, and the trees on all sorts of stocks, in all forms, shapes, and sizes. Around the edges of the walks, as a bordering for the other trees, are great numbers of the at-present-fashionable cordons, equally as good home-grown as any I have seen on the Continent. Those

therefore, who may wish to procure these trees in whatever form they desire, — cordon oblique, horizontal, vertical, one-armed or two-armed, — may here do so to their heart's content. A novel form of cultivating the Morello Cherry, which I have only once seen before, was pointed out to me ; that is, as dwarf gooseberry-bushes, — a really admirable plan. How enormous the quantity of fruit that might be grown in a small space in this way ! and we all know how well suited the Morello is to this style of growth.

Another specialty now receiving Messrs. Veitch's attention is orchard-house trees ; and a finer lot than those to be seen here cannot well be desired. Numbers of them are established in pots ; some plunged in the soil in a small orchard-house (fine examples they are too), others plunged in the open quarters. An excellent mode adopted by the Messrs. Veitch, or what Mr. Reid, their able manager, calls "preparing the trees," is the planting-out in the open ground the young maiden trees, and there growing them to the size and form desired. They in this way attain the desired size sooner, and form much stronger and finer trees, than those that may be grown in pots. Example : a maiden peach-tree is planted in light but rich soil in November, and pruned as required in February, the side shoots pinched, if requisite, during the summer ; such trees, if potted in the end of September, will fruit in the following year. If larger plants are desired, they must remain in the ground another season or two. By this plan, the pot cultivation of one season at least is entirely avoided ; and Messrs. Veitch's trees treated in this way are very good indeed, — fruitful, stocky trees. — *London Journal of Horticulture.*

ERRATUM. — The Salem Grape was inadvertently described in our May number as *black*. It is *red*, like the Catawba.



THE Editors of "Tilton's Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

T. P., Cedar Rapids, Io. — Is not the Worcester Seedling Potato the same as the Dover? I have grown the Dover for several years, and think it answers to the Worcester as described in the December number of the Journal. We think it the best of all. We have six or eight sorts, but plant more of the Dover than of any other, because they are the best. — The Dover and the Worcester seedling are the same. It is also called Riley by some.

T. T. S. writes as follows, "A pine-tree near this place was girdled twenty odd years ago: below the girdle, the tree is the same size now as when girdled; above, the trunk is double size. The tree is still alive." — We have known trees that we girdled to live one or two years, but are surprised to hear that one should live for more than twenty years.

R. M. W., Towanda, Penn. — How can strawberry-plants best be propagated in hot-houses or hot-beds, during the winter months? — Let the plants to be propagated from be set in the earth, or in large pots, and, as they make runners, place every embryo plant in a small pot, and cover it a little, and it will soon be well rooted, and so on. We have known them to be allowed to run in the hot-bed and root as out of doors.

MUSCATINE, IO. — I never saw a better prospect for fruit at this time (May 6). Season late; pear and cherry in bloom; apples budding very full. We have had some warm days, but to-day it is cool. Grass and small grain in fine condition; corn-planting is brisk this week; land in good condition. The heavy rains at the East four days ago did not reach us. *Suel Foster.*

THE BARCELONA OR SICILY NUT. — We wish to make some inquiries respecting this nut, a specimen of which we have just received from Mr. L. Jenney, jun., of Fairhaven, Mass. It is a species of the filbert, larger and more oblong than those usually seen in our markets, and of most excellent quality. Mr. Jenney describes the tree or shrub as yielding abundantly, and pronounces it an "agricultural wealth." We have never considered the filbert sufficiently hardy for the climate of New England, or the cooler sections of the United States; but this variety is represented as having sustained no injury from a temperature of nineteen degrees below zero. If such is the fact, it must be an acquisition. Will any of the readers of the Journal furnish us with additional particulars, or give their experience in its cultivation? *F. Burr.*

X. — What are the best labels for fruit-trees? — Plain zinc, written on with a common lead-pencil, as discovered by Mr. Wilder; no troublesome sal-ammoniac or any other ink being needed. They write better if spread out of doors for a few nights so as to be slightly roughened by the action of the dew. If the writing appears defaced, it can be made plain by rubbing with a wet finger, even after years of exposure to the weather. They should be fastened on with copper wire.

G. T. ROBERTS, Station K., Manhattanville, New-York City, would like to know how to plant mushrooms, and where the spawn can be obtained. — If you had read the March and May numbers of the "Journal of Horticulture," you would not be under the necessity of asking this question. However, it is not too late to subscribe now; and you will find at pages 177 and 291 an answer to the first part of your query, and this notice will undoubtedly bring you offers of the spawn from those who have it for sale.

Editors of Tilton's "Journal of Horticulture:"—

IN an article entitled "Remarks on the Pink Family," written by that eminent horticulturist, Joseph Breck, Esq., in your April number, I find at page 200, line 11, an error which I desire to correct.

There is no such expression in the French language as *piquetée*. The French word Mr. Breck doubtless intended to use is the adjective *picoté*, which latter means "dotted" or rather "pitted;" for instance, *picoté de la petite vérole*, "pitted with the small-pox;" and expresses the peculiar color of the flower.

Piquette, a substantive in the French language, resembling in orthography the term erroneously used in the article, possesses a totally different meaning. It is a word applied to a liquor pressed out of grapes, after they have been squeezed, and water poured upon them; an inferior kind of wine in use among the poorer classes of France for centuries past, that differs, as you will perceive, from the "gallized" article now extensively transmuted from water into wine by the alchemists of the New Missouri School only in one particular, viz., the addition of sugar previous to fermentation; a substance the French, from motives of economy, I presume, do not employ in the fabrication of their *piquette*.

As in the West, at least, thanks to the strenuous efforts of growers and dealers who believe in manufacturing and selling rather for immediate profit than for a lasting reputation, "gallized" wine is gradually superseding the pure fermented juice of the grape, I suggest, that, for the want of an Anglo-Saxon term to designate the new article, we apply henceforth to this particular class of fermented beverages the French appellation of *piquette*, to distinguish the same from the juice of the grape fermented without the use of sugar, water, or other chemical ingredients, and which latter, we will, for the present, in accordance with the commonly-received notion, continue to call wine.

Very respectfully your obedient servant,

John F. Wielandy.

JEFFERSON CITY, MO., April 26, 1869.

Q.—How far apart shall I plant standard apple and pear trees?—Fifteen feet is a good distance for pears, and thirty for apples, on ordinary soils; but on rich soils they should either be planted farther apart, say twenty feet for pears, and forty for apples, or else plant the pears ten and the apples twenty feet apart, and remove every alternate tree when they begin to crowd each other. This is a good plan for exposed positions, as the trees will shelter each other when young. On poor soil, they may be allowed to remain at the same distance as planted. Many of the best cultivators recommend planting more closely than was formerly thought advisable.

M. HINCHCLIFF, Bristol, Conn., wishes to know whether the Siberian arborvitæ will endure the weather in a very exposed situation.—Yes: it is perfectly hardy. The sub-species, *Warciana*, is equally as hardy, or even more so, and quite as vigorous; and the foliage is stronger, thicker, and of a deeper green.

A CORRESPONDENT wishes to know where and at what price he can get trees of the Newman Plum, described in our March number.

W. H. HAYWARD, Anamesee, Io., has understood that a grape-seed, of whatever kind, if planted, would always produce a grape, if the vine was a bearer, similar to those growing wild in the locality where it was planted; and such has always been his experience and observation. And he mentions several instances where this is supposed to have happened, and wishes to know how it is that the seed of a grape hybridized while in flower produces a vine the fruit of which is unlike the fruit of the wild vines in the neighborhood. — Most of the cases mentioned by our correspondent may be explained by the well-known tendency of all cultivated fruits to return to the wild type. But in regard to the grape said to have been produced in Franklin County, Mass., from the seed of a raisin, and to resemble the wild grapes of that vicinity, we think there must be some mistake. We suppose the raisin grew in Europe, where it could not possibly have been fertilized by the pollen of our native grapes; and, under such circumstances, it is impossible for a seed of the European species to produce a vine of any of the American species. But when a grape is hybridized as described in our May number, a new element is introduced. The pollen which fertilizes the seed imparts to it more or less of the peculiar characteristics of the different variety from which it was taken. It is only in this way that the seedlings mentioned by our correspondent could have been modified by the vines growing in the neighborhood where they were raised.

V. M. H., Jefferson, O. — We regret to say that the pansy sent is neither rare nor in any way remarkable. It may look well in the garden; but a package of mixed seed of the lighter colors would give dozens quite as good.

SEMPER, Cumberland, Ind. — Your hints on tropical plants give us nothing new, except the experience that fresh cow-manure applied to cannas in a liquid form throws them into profuse bloom. Write out for us your experience in bedding out caladiums; giving varieties, situation, height the plants attained, size of foliage, &c. It is a subject on which information is needed.

The *tropæolum* buds often fail to expand in the short days, owing to a want of light and heat. If you had not cut down the plant, you would have had flowers enough as soon as the days grew longer.

IDEM. — Use common hydraulic cement for your aquarium, if a large one. If small, and of glass and stone, set the glass in white lead.

IDEM. — Is *Bignonia* (*Tecoma* more properly) *grandiflora* hardy with you? Are you not rather far north for it? — Where not winter-killed, it blooms freely as soon as the plant gets age.

IDEM. — Camellias Sarah Frost, Lady Hume's Blush, Wilderii, Fimbriata, Alba plena, Landrethii, Imbricata, and Doncklerii are all good bloomers.

D. S. HAMPTON, Macomb, Ill. — The evergreen shrub of which you sent us a leaf is *Euonymus Japonicus*.

M., Nantucket. — The "cactus" you send as hardy, and growing wild, is the prickly pear (*Opuntia vulgaris*). The habitat where you found it is almost its northern limit. We have it in our garden, where it does well. There is a long article upon it in the number of the "Revue Horticole" for April 16; a large patch of the plant having been found growing in an obscure village, where it had been from the earliest remembrance of the oldest inhabitant. *O. Rafinesquii* is a western species, and is far handsomer.

TYRO, Manchester, N.H. — The following magnolias are hardy in the vicinity of Boston: *M. tripetala*, *cordata*, *acuminata*, *auriculata* or *Fraseri*, *glauca*, *do. longifolia*, *conspicua*, *Soulangiana*, and all the hybrid species (*purpurea*, *gracilis*, and *macrophylla*) after they attain age.

Of these, *cordata*, *acuminata*, and *glauca* would certainly be hardy with you; *tripetala*, *conspicua*, *Soulangiana*, and *auriculata* would probably stand the winter if not in too exposed a situation, and *macrophylla* and *purpurea* would probably prove tender.

ANNIE LAURIE. — The berries found on a tree are evidently those of the nettle-tree, *Celtis occidentalis*. It may be popularly described as "an elm bearing cherries." Certainly it is worth transplanting. Sow the berries at once for young plants.

INQUIRER, Southborough, Mass. — It is as difficult to name a plant from the petal of a flower as from a leaf. We may be able to give a name in both cases; but the chances are against it. When writing for information, give us the benefit of all the knowledge you have, and we may assist you to a correct conclusion. The editors have no time to puzzle out your difficulties, but, if the case is fairly stated, do all they can to impart information.

Your letter and the enclosures are unworthy of one honestly seeking information.

BEACON STREET. — The flower sent as an amaryllis belongs properly to the sub-genus *Hippeastrum*. If a seedling, which we somewhat doubt, it is too near many of the old varieties to be of special value, and yet is a very good flower.

"CATERPILLARS." — Certainly destroy nests of the tent-caterpillar wherever you can find them. An effort was made for several years past to procure the enactment by our legislature of a statute for the destruction of insects injurious to vegetation. Our most prominent agriculturists appeared before the legislative committee to urge the bill; but, probably, as there was no "axe to grind" in the matter, and no chance for lobby interest, the petitioners had leave to withdraw.

ORNAMENTAL BUSH. — Your "bush" is *Acer negundo* fol. var., and is the best variegated tree we have. It does not, however, continue as beautiful all summer, as the sun injures the foliage.

W. S. H., Roxbury. — *Magnolia Soulangiana* is a hybrid between *M. conspicua* and *M. purpurea*. It blooms later than the former, and is more hardy than the latter. There are also other hybrids and many seedlings from these two varieties. They differ chiefly in the shade of purple and the markings of the flower. *M. speciosa* is the best, *M. Norbetiana* the darkest colored; *M. Lenne* is a new French variety with large, pinkish-purple flowers, which with us has survived the winter uninjured. All these should be budded on *M. acuminata* as a stock: they thus become hardier, of taller habit, and more vigorous in growth.

A NOVICE. — *Names of Plants*. No. 1, *Fothergilla alnifolia*; No. 2, leaf of a *Corydalis*. We cannot tell species by a leaf; but yours is probably *C. nobilis*. Is the flower yellow tipped with black? No. 3, *Trillium sessile*, a Western species.

CREEPER? Hudson, N.Y. — *Clematis montana* is annually killed to the ground with us, though we believe Mr. Parkman (our best authority on the clematis) considers it hardy. The best clematis is *Azurea grandiflora*, and for a lighter color, *Sophia*. *Passiflora cærulea* is not hardy with us.

A PUZZLER, Worcester. — The plant which you have seen "with little trumpet-like yellow flowers and bracts of rich mauve color," is doubtless *Bougainvillea glabra*, not a new plant, but one whose true culture has only recently been discovered. In our vicinity, Mrs. Ward of Canton has flowered it magnificently in her greenhouse, and often exhibited it at the rooms of the Massachusetts Horticultural Society.

There are other species, *B. lateritia*, with brick-red bracts, and *B. speciosa*, with rich mauve, and the best of this lot.

They may be flowered perfectly well in a large pot, and need not be planted out.

SUNDAY WALK, Gambier, O. — The pink flower is *Claytonia Virginica*, or Spring Beauty. The blue were all tumbled to pieces; but the remains are *Hepatica triloba*, or Squirrel Cups.

ENGLISHMAN, New Bedford. — Medlars are not worth planting for the fruit; but are a pretty, low-growing tree, and are very showy when in flower.

QUERIST, Jamaica Plain. — William C. Strong, Brighton, can probably supply plants of *Exochorda (Spirea) grandiflora*. It is one of the most beautiful hardy shrubs.

