Technical and Bibliographic Notes / Notes techniques et bibliographiques

Canadiana.org has attempted to obtain the best copy available for scanning. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of scanning are checked below.

Canadiana.org a numérisé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de numérisation sont indiqués ci-dessous.

- ☐ Coloured covers / Couverture de couleur
- ☐ Covers damaged / Couverture endommagée
- ☐ Covers restored and/or laminated / Couverture restaurée et/ou pelliculée
- ☐ Cover title missing / Le titre de couverture manque
- ☐ Coloured maps / Cartes géographiques en couleur
- ☐ Coloured ink (i.e. other than blue or black) / Encre de couleur (i.e. autre que bleue ou noire)
- ☐ Coloured plates and/or illustrations / Planches et/ou illustrations en couleur
- ☐ Bound with other material / Relié avec d'autres documents
- ☐ Only edition available / Seule édition disponible
- ☐ Tight binding may cause shadows or distortion along interior margin / La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure.

- ☐ Coloured pages / Pages de couleur
- ☐ Pages damaged / Pages endommagées
- ☐ Pages restored and/or laminated / Pages restaurées et/ou pelliculées
- ☑ Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- ☐ Pages detached / Pages détachées
- ☑ Showthrough / Transparence
- ☑ Quality of print varies / Qualité inégale de l'impression
- ☐ Includes supplementary materials / Comprend du matériel supplémentaire
- ☐ Blank leaves added during restorations may appear within the text. Whenever possible, these have been omitted from scanning / Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été numérisées.

☑ Additional comments / Commentaires supplémentaires: Continuous pagination.

THE

Canadian Horticulturist.

VOL. VI.] OCTOBER, 1883. [No. 10.

HARDY HERBACEOUS PLANTS.

There are many very beautiful hardy plants that can be grown in the flower border which require but little attention as compared with the growing of annuals, and yet one seldom finds them even in the gardens of those who are fond of flowers. One of these hardy plants is shown in the colored plate that adorns this number. It is the Dicentra Spectabilis, the Chinese counterpart of one of our native wild-wood flowers which is commonly known by the name of Dutchman's breeches. This showy flower was introduced into this country many years ago, creating a great sensation on its first arrival and selling at very high prices. It is not only very hardy, but yields more and finer flowers if kept in the open ground over the winter, exposed to hard freezing than if kept in a place free from frost. Those who plant it in pots for early spring forcing have learned that in order to the best results for forcing purposes, it is necessary to expose the plants to severe freezing.

In the older horticultural works this plant will be found described under the name of Dielytra Spectabilis. It was found by Mr. Fortune in the gardens in northern China, and sent by him in the spring of 1846 to the London Horticultural Society, England, and esteemed at that time the most brilliant hardy plant added to our collections for many years. It flowers in the spring, the stalks rising to a height of about two feet, with flower spikes from six to eight inches in length, which hang gracefully curved to one side. It delights in a rich loamy soil, where it will soon form a large plant, which, if desired, may be divided very early in the spring as the buds begin to appear above the surface, and thus the number of plants increased.

Its graceful style of growth, combined with the brilliant coloring and unusual form of its flowers, and its perfect adaptation to our Canadian climate, make it worthy of a place in every cottage garden of the land.

The blue flower which is shown in the colored plate is a very fine variety of the Heliotrope, which is so universally admired for its delicious perfume. It is not a hardy plant, and therefore must be brought into the house on the approath of frosts. It will grow well in the kitchen window provided it be not allowed to freeze on cold nights. During the summer it can be planted

out in the open border, and lovely blue flowers freely cut for bouquets.

DWARF PEAR TREES.

I have about thirty dwarf pear trees whose leaves, after turning brown, have all fallen off and fresh foliage formed. The bark is not at all affected.

1. Will the trees die, or can they be saved, and how?

Will the *Horticulturist* kindly reply in the next issue?

2. Also, if the Clematis can be propagated by cuttings? R.

Toronto, 13th August, 1883.

1. It is impossible to tell whether the pear trees will die or not. The formation of fresh foliage gives ground for the hope that they will survive.

2. Clematis does not grow readily from cuttings, but does well layered.—Ed.

To the Editor of the Canadian Horticulturist.

Mr. Editor,—Is the wild cucumber, *Echinocystis lobata*, poisonous? It is an annual. The leaves resemble the leaves of the cucumber of our gardens, but are more indented. The flowers are white formed on sprays. The fruit or pod is oval and covered with prickles. The plant is a rapid growing creeper. The seeds are similar to those of the water-melon.

Yours truly, F. G. B.

Ottawa, Sept. 14, 1883.

Reply.—Not being familiar with the plant, we referred the question to Wm. Saunders, Esq., of London, an able chemist and botanist, to which he replies as follows:—"I have not been able to find in any book in my possession anything relating to the physiological action of the Echinocystis lobata, but since it is closely related to the squirting cucumber, *Ecbatium officianum*, from which Elaterium is prepared, one of the most violent drastic cathartics known, I should expect that it would act violently on the bowels if any of the fruit was swallowed, producing abundant and watery stools."

Prof. Asa Gray, in his Manual of Botany, gives Wild Balsam Apple as the common name of this plant.

ALUM FOR CURRANT WORMS.

To the Editor of the Canadian Horticulturist.

Mr. Editor,—In answer to Mr. J. Savage's inquiry as to how to make and apply the alum water, I took the receipt from page 4, January number. The solution is one pound of alum dissolved in three gallons of rain water. The mode of proceeding is to dissolve the alum in a small quantity of water, then add sufficient water to make three gallons. When cold, put in a common watering pot with a rose spout and sprinkle the currant bushes as soon as the worms appear, at first for two or three days every morning, and then once or twice a week will keep them clean, or at least did mine.

Yours truly,

O. H. Webber.

Hamilton, Sept. 20, 1883.

SIZE OF JAMES VICK.

Mr. A. M. Purdy writes to us as follows: "Pardon me, but six such large berries as you show for James Vick could not be found on any plantation of that sort. Mine were not half that size."

We supposed that Mr. D. M. Dewey, of Rochester, N.Y., under whose supervision the coloured plate of James Vick was printed for our August number, had such a reputation for accuracy in these matters that no one could challenge his representations.

SUMMER MEETING OF THE FRUIT GROWERS' ASSOCIATION OF ONTARIO.

For "Canadian Horticulturist."

MR. EDITOR,—On Monday, August 27th, my friend, W. W. Hilborn, and I, boarded the noon train at Watford, for St. Catharines, to attend the summer meeting of above Society. We safely arrived at our destination in the evening of the same day, after a very pleasant transit through an exceedingly fine and promising country in the midst of a Canadian harvest. The weather was exceedingly pleasureable, and the fruit trees through which we passed, though, as a general thing, not loaded with fruit, yet they studded the landscape and added beauty and a charm to the ever-changing scene. It is not possible to travel any considerable distance into the heart of our country without being convinced of the greatness awaiting it in its coming grandeur of development.

The following day we spent in the city, and by the assistance of kind friends visited many beautiful and charming places. We first called at the private gardens of the Hon. T. R. Merritt, whose gardener, Mr. Cameron, took us under his care, and led us through the varied and beautiful scenes of the garden. Everything was in the best of condition, and commanded our highest admiration. The large and varied beds of gay flowering and foliage plants were perfectly beautiful. In the fruit garden the loaded trees of beautiful and well-formed pears and plums, and trellises of grapes, were something to excite our deepest astonishment—such quantities and such beautiful and perfect specimens. In the grapery the large and beautiful clusters of foreign grapes, suspended above us, were something truly admirable. In the lawn the old and beautiful Norway Spruce, Balsam Fir, and other ornamental trees, were exceedingly fine. Such grounds as these are not only the pride of the owner, but the admiration of the people, and a blessing to the country.

We next visited the home grounds of John Riordon, Esq., whose gardener, Mr. Dunn, also very kindly showed us some wonders of his skill in planting and training. He first took us into the grapery under glass, where fine Black Hamburgs, and luscious Muscats were hanging in enormous clusters over our heads. These beautiful grounds are perfectly charming. The conservatory, a large glass structure filled with noble Palms and many other exotics from far southern climes, was one of the most delightful places we had ever seen. The lawn was well supplied with fine old specimen trees of varied habits and foliage, intermixed with beds of the richest color in flowering and foliage plants. In the fruit garden we were also shown beautiful fruits, all that the heart of man could desire.

We also visited the nursery grounds and private gardens of D. W. Beadle, Esq., the industrious Secretary of the Ontario Fruit Growers' Association. These grounds are on the very site where the old St. Catharines nurseries were first established by Dr. Beadle, the venerable father of the present esteemed owner. These admirable grounds are very extensive and well located, and are covered over with trees, plants and flowers of almost every conceivable pattern. The soil is admirably adapted to the purpose to which it is put, the growth of the trees and the nursery business.

We afterwards visited the celebrated Dominion Gardens of A. M. Smith, Esq., whose grounds are so widely known as the birth-place of the Early Canada Strawberry, and the Niagara Raspberry. Here we saw growing, the wonderful Niagara Grape that is now agitating the whole country so much

It is a most beautiful and promising white grape, and is owned by a company at Lockport, N. Y., but is restricted so that we cannot get it. St. Catharines is a wonderful point of interest in Canadian Horticulture, and is, to us, the Rochester of Canada, and well repays the visitor. The Fruit Growers' Association meeting was very interesting, being well attended by the citizens and others. The discussions were varied, interesting, and lively, and many items of importance taken up. Lasting as it did for two days, much valuable and efficient work was done. The questions mainly relating to fruits and fruit-growing in kinds and methods, especially Raspberries, Currants, Strawberries, Gooseberries and Blackberries; also Grapes, Early Peaches, and Apples, &c., and were discoursed in a most cordial and friendly spirit, for our mutual benefit and improvement. There were many beautiful fruits on the table from different parts of the country for inspection. The Niagara Grape was there from Virginia also fine samples of Plums, Peaches, Apples and Pears; also many flowers and beautiful flowering plants. The committee whose work it was to examine these beautiful and tasty things, has done so, and their notices will be had in the next Annual Report of the Association.

After the hard work of the sessions had been fairly got over, the members from abroad were very generously invited to partake of a spread in the dining halls of the Welland House, where many of the citizens sat down with us to a sumptuous repast of ripe fruits. After justice had been fairly done to the good things before us, some cheering and edifying speech-making was had for our mutual improvement and benefit. It was a grand acquaintance meeting, and scenes like this are very pleasaat and long to be remembered. The next day the programme was changed. The excursion for the members to Niagara Falls was under the leadership of Mr. Morden, of Drummondville, whose services were very kindly rendered for our enjoyment. This was the closing scene in the varied acts, and, if possible, the grandest of the series. What can compare with nature? Who can paint like her? We wonder at the magnitude of the scene. It is past all description, and if any of my readers wish to get a more definite idea of it, they must see it for themselves. Our kind leader took us also among the gardens and orchards of Drummondville, and showed us much of the varied and wonderful scenery of the place and neighborhood. We had a very pleasant time, and one long to be remembered.

Yours, B. GOTT.

Arkona Nurseries, Sept. 1883.

GIRDLED TREES.

Some ten years ago, having seven apple trees girdled by mice, as soon as the snow was gone I took fresh lard and coated the part eaten well over. I then heaped as much of the soft wet earth over that as I could get to stick. I then took some old rags and tied all securely to the trees, and in the fall there was hardly a spot but what was covered with a coarse, strong, thick bark. My idea in trying that process was that the sap would rise between the lard and the bare wood and so form new bark. It did so, but whether the idea is correct or not I would not say. For about three months if the weather is very dry it is best to water the rag and earth well to keep all moist. I have also saved all my young trees which have had the top all die down with sometimes part of the stem, by cutting off all down to where the bark is green; the stump will then force out

more buds than required; let them grow about four inches long and rub off all but one or two according to the height of the stump from where the new growth commences. As all my cherry trees (the common red) is covered with Black Knot since spring, instead of cutting them all out I intend next spring to use the same method of putting on new heads as with the young trees. With this difference I will leave on all the large limbs, cutting them about two feet long from the trunk of the tree, cutting them all off at one height from the ground to form an even tree head. E. DAY.

Elora, Aug. 14th, 1883.

IN MEMORIAM.

DR. JOHN A. WARDER, of North Bend, Ohio, passed away on the 15th of July last, in his seventy-second year. He was one of the most successful physicians of Cincinnati, but in 1855 he relinquished the practice of medicine, purchased a farm of some three hundred acres at North Bend, where he devoted much of his time to the testing of fruits. He was an enthusiastic student of nature, and gave much attention to the study of American trees. His writings on Forestry in some of its departments have adorned the reports of our own association, and he was everywhere an acknowledged authority upon matters relating to trees. We had hoped he might have been spared for years to come, to give us the fruits of his careful observation and ripe experience which his facile pen recorded in such attractive style.

HENRY B. ELLWANGER, of Rochester, New York, died at his residence on the 7th of August last, at the early age of thirty-three. His work on the Rose, published last year, has shewn him to be not only an enthusiastic cultivator, but a graceful writer, and systematic student, qualities which caused us to expect much from him in coming years. He is taken away at the threshold of his experiments in cross fertilization of the rose, which were already giving promise of very interesting results. We know not how we can spare such an one from our midst, and mourn the loss of a worker in the field of horticulture whose continuance seems to us to be greatly needed.

THE VICTORIA REGIA.

HISTORICAL REMINISCENCES BY PROFESSOR SAMUEL LOCKWOOD, PH. D.

It was our privilege to see this queen of the Water Lilies in bloom at Kew Gardens, England, October, 1878. There was a display of Water Lilies from all parts of the world, in every witchery of form, color, and odor—pure white, soft rose-tinted, and deep pink, and the loveliest blue. But the most entrancing for form, color, size, and fragrance was the *Victoria*. She shone, indeed, as the empress of the entire floral dominion.

The present generation cannot realize the interest taken in this superb plant nearly forty years ago—the intense desire to get specimens to Europe, the great efforts, and the provoking failures. Even the seed would refuse to germinate. At last, it was taken over the sea in its native water, and painful care was had as to temperature—even periodical agitations of the fluid, as if to deceive the coy embryo into the idea of the flowing of its natal stream. When success was attained, it was accounted among the florists of the world as "the big thing of the age." But the conditions of success were so costly: a glass house, a tank of thirty feet diameter, and the water steadily kept up to eighty degrees temperature; private means, unless munificent, could not suffice.

The leaves of the plant are six feet

in diameter; they are green above and red underneath, suggestive of the color habit of the foliage of the Begonias, especially *B. sanguinea*, though it should be said that, as a rule, the Water Lilies have the underside of their leaves of a liver-red, or purplish. These gigantic Lily-leaves, speaking popularly, are, when full grown, round, and with the edge turned up two inches or more, look like immense floating tea-trays. Large aquatic birds stand on them by the hour, watching for fish to pass by. But those great leaves are ribbed in a most ingenious way, imparting immense strength; so that with a board properly arranged to distribute the pressure, a prodigious weight can be borne. I have some notes which I think were made some thirty years ago, from which we will extract, though the figures seem incredible. It was stated in *Science pour Tous*, that in the aquarium of the Botanical Garden at Ghent, the head gardener, M. van Houtte, was interested to learn the force required to immerse one of the floating leaves in the water. One leaf supported a child; another was not submerged by the weight of one of the gardeners. He was led to experiment as to the limit of this resistance—loading the surface of one of the largest leaves with bricks. It was found to bear a weight of 760 pounds avoirdupois—that is to say, nearly equal to five men of average weight.

The first successful effort to bring the *Victoria regia* into bloom in England was in the world-famous botanical gardens of the Duke of Devonshire, at Chatsworth House. Joseph Paxton, the Duke's head gardner, constructed the great glass house for its accomodation, which took the name of its gorgeous occupant. The hint for the construction of this fairy-like building was derived from a study of the structure of the *Victoria's* leaf.

We may, in passing, say that Mr. Paxton designed the Crystal Palace for the World's Fair in England, 1851, built chiefly of glass and iron, all being primarily due to his study of the leaf mentioned. For this achievement he was knighted, and thus became Sir Joseph Paxton.

The first flower of *Victoria regia* in England, was in November, 1849. The event brought together a distinguished concourse of visitors of the nobility and *literati*. A novel event was the appearance, on the occasion, of little Miss Annie Paxton, who, dressed in costume of a fairy, took her place in one of the tray-like leaves, and, like a Naiad of the waters, presided as the fairy guardian of this beautiful floral queen. Such an event could not be less than inspiring; accordingly, the muse of the famous Douglas W. Jerrold produced the following:

On unbent leaf, in fairy guise
Reflected in the water,
Beloved, admired by heart and eyes,
Stands Annie, Paxton's daughter.

Accept a wish, my little maid,
Begotten at the minute,
That scenes so bright may never fade,
You still the fairy in it.

That all your life, nor care, nor grief,
May load the winged hours
With weight to bend a lily's leaf,
But all around be flowers.

It will astonish some to be told that the *Victoria regia* was made to flower in a tank in the open air by Mr. E. D. Sturtevant, at Bordentown, N. J., last August, the water being kept at its right temperature by pipes. I was one of a small party invited to witness the event, but was far away at the time. An enthusiastic friend wrote me about it, and what follows is mainly from his letter: At the first visit, the leaves were six feet across, with a rim about two inches high, and a bud just visible in the depths. It was expected to

bloom in two weeks, and we intended to go again with yourself, Mrs. Treat, and others. Alas! the bud shot up with almost visible rapidity, and bloomed on Sunday evening. I saw it at its second opening, when it was somewhat the worse. At its first opening, the flower rested on the water, a pure white blossom a foot in diameter, and filled the air with a delicious pine-apple perfume; at its second, it was raised above the surface, the petals had become a pale rose, and were strongly reflexed, while the perfume was entirely gone. The stamens were a deep rose color, and folded down, so as to completely cover the stigma, etc. On this second evening, a strange event took place, which we unfortunately did not see, as we had to go to the train, but which was communicated by those who did see it. About half-past seven P. M. the stamens suddenly lifted themselves, and with quite a perceptible jerk shook a mass of pollen down on the stigma. It seems hardly credible, but it is true; this Victoria had produced four great leaves, with another partly unrolled, and had bloomed, all from a plant six inches high, with one small leaf, in just four months. One would think that the forming of its cells ought to be visible with a hand lens.

To give completeness to this little sketch, let me quote from the *American Cyclopædia*: "The flower is of two days' duration. The first day it opens about 6 P. M., and remains open until about the same hour next morning; in this stage it is cup-shaped, twelve to sixteen inches across, with numerous pure white petals, and emits a delightful fragrance. The second evening, the flower opens again, but it presents an entirely different appearance; the petals are now of a rosy-pink color, and reflexed, or bent downward from the center, to form a handsome coronet, but now without odor; the flower closes toward morning, and during the day it sinks beneath the surface to ripen the seed."

BAGGING GRAPES.

Within a few years, the bagging of Grapes has occupied the attention of many horticulturists. One who has given much attention to this subject, says: "If the application be made in time, the paper bag will preserve the cluster in more exquisite perfection than can be secured in any other way. The Grapes come forth luscious and beautiful enough to amaze Nature herself."

When to bag.—The only safe rule is to apply the bag as soon as the cluster is formed. If delayed too long, the spore of disease may have attached itself to the berry and result in rot. Some have applied the bag before blossoming has taken place. As the new shoot is very tender and brittle, great care must be exercised not to break it.

How to bag.—Take manilla or any other paper bags; cut off the upper corners, in order to wrap the upper portion around the cane; place the cluster inside the bag, wrap the bag around the cane, and then pin it.

Size of bag.—This depends upon the usual length of the cluster, and whether more than one cluster is placed in a bag, a two or three pound bag is sufficient for most single clusters.

Results of bagging.—The cluster will average larger, ripen later, color in general better, produce larger berries, and the bloom will be preserved more perfect than in those not bagged. As to flavor, opinions vary, some think it is better, others that it is not improved.

Bagging as a prevention of rot.—If applied early enough, it is a prevention. Rot is found in some cases in the bags, but mostly takes place after the Grapes are ripe.

Bagging as to the splitting of the Grapes.—Many of the thin-skin varieties split badly in the bags. The Elvira, which, out of bags, splits so badly as to be comparatively worthless, owing to the crowding of the berry in the cluster, also does the same in bags.

The Duchess keeps its color when bagged; Delaware, as a general rule, becomes deeper, Brighton lighter in color; Niagara improves in color and flavor.

The present summer many will bag Grapes by way of experiment. It is doubtful if bagging will become general in vineyard culture, as the extra expense incurred thereby is not made up in the sale of the fruit. To the ordinary purchaser of Grapes in the market, fine clusters, large berries, pure color, and bloom, and exquisite flavor are secondary considerations. To the amateur, or those who enjoy to sit under the shade of their own vines, however, these qualities are precious; and, as the experiment of a few bunches requires but little time and expense, it is well worth a trial of those who grow Grapes for their own use.—J. B. ROGERS, *in American Garden.*

THE NEWER STRAWBERRIES.

On our grounds in the vicinity of New York, on rather heavy clay soil, the Strawberry crop was very good, and most of the new varieties proved satisfactory.

Manchester improves by longer acquaintance. With us the plant is very vigorous, foliage healthy; the berries are larger, lighter colored, and of better quality than those grown in the Jersey sands.

James Vick has been grown in a trial bed together with Captain Jack. The two kinds are not identical. Although they resemble each other in general appearance, the James Vick is decidedly the better of the two; its foliage is larger and more vigorous; its berries are larger, very firm, of more sprightly flavor and generally better quality, and are borne on longer, stiffer, upright fruit-stalks, not hugging the ground like Captain Jack. How a Strawberry plant can be more productive than the James Vick is not easily imaginable.

Jersey Queen made but a poor growth.

Sharpless, although of indifferent quality and not ripening well at the tips, has in its favor largest berries, very large, healthy foliage, and under favorable conditions, great productiveness.

Bidwell has been very satisfactory for home use, producing a large crop of good-sized, well-shaped and good-flavored berries. Both in hills and matted beds, the plants wintered remarkably well during the last two winters, without protection.—*American Garden.*

FREESIAS.

Freesias are little bulbous plants from the Cape of Good Hope, long known to botanists, but only recently introduced as popular garden flowers. They grow twelve to fifteen inches high, have foliage not unlike small narrow-leaved Irises, and a little bunch of white or yellow, spotted with orange, colored flowers at the end of a ten to sixteen-inch long, slender scape. These flowers are moderately large, very pretty, deliciously fragrant, abundantly produced, and great favorites with florists for their finer bouquet work. Potted in September or October, say six to nine bulbs in a six-inch pot, and grown along as you would a potted Hyacinth, slowly at first, then in lighter and warmer quarters, they will blossom between January and the first of April. During the summer months let them "dry off and rest," as you would

an Oxalis, and start them again, by giving a little water in September. Unless you think there would be too many roots in the pot you may grow them in the same soil, and without repotting them for two years, providing you give them a top dressing of fresh rich earth. They are easily raised from seed, and seedlings one year old will blossom. Their nomenclature is somewhat muddled, but the two kinds known as *Fressia refracta alba*, and *F. Leichtliniana* are, I think, as good as any.—WM. FALCONER, *in Am. Garden.*

EUCHARISES AND THEIR CULTURE.

Of all plants requiring stove treatment that have been introduced into Europe during the present century, there are few, if any, that have become more general favourites than Eucharis amazonica, or that better deserve to be grown by all who have the convenience of a house wherein can be maintained an amount of temperature sufficient to grow it. When this plant first made its appearance in this country the extreme purity of its lovely white flowers, combined with their exquisite fragrance at once produced an impression in its favor, even though imperfectly grown —imperfectly so far, that the small-pot culture, to which it was then thought best to confine the plant, was not such as to admit of that full development which it has since exemplified under more liberal treatment. The restriction of its roots to promote flowering has been found to be altogether unnecessary and to seriously prevent the bulbs from increasing as they would have done if accommodated with plenty of space. In this it differs from most bulbous plants, the generality of which do not succeed well under pot culture unless their roots are somewhat confined. It has no particular season of flower ng ; with suitable treatment the same plants will bloom two or three times in the course of the year by subjecting them to a alternate short season of growth and rest. To do it full justice it should not be moved when in bloom to a conservatory or other house cooler than that in which it has been brought into flower. Growth should immediately follow the production of bloom, and it naturally receives a check if taken from a warm to a cold temperature. It is a remarkably effective plant in the stove, its ample green leaves setting off to the best advantage the numerous umbels of wax-like flowers that rise well above them. It is, however, especially for the production of cut flowers for filling vases and for bouquets that it is most valuable, almost rivalling in these respects the Camellia itself. In addition to the individual flowers standing well when cut (which their peculiar texture and substance insure) each umbel opens its blooms consecutively, so that when desired almost every flower can be used as required, a circumstance that has made the plant a general favourite with those who grow flowers for market, or who have to provide for private establishments where a continuous supply is needed.

PROPAGATION is effected by separating the bulbs, which increase moderately fast when well grown, but, like most other evergreen bulbous plants, it does not like to have its roots much disturbed. Interfering with them, to the extent necessary when separating them, has the effect of retarding growth for a time ; therefore plants of this Eucharis should only be broken up when they have either got larger than is requisite, or when it is desirable to increase their number. The time for carrying out the operation should also be chosen when growth is complete ; it should not be attempted when the leaves are in course of formation, or when they are not fully matured. Let us suppose

that early in the spring a large plant exists which it is deemed advisable to break up, turn it out of the pot, and if the roots are very much matted and the soil of an adhesive character, it will be difficult to separate them without breaking; to avoid this place the plant in a tub large enough to admit the ball, half fill it with tepid water, and work out all the soil with the fingers, which will leave the roots so that they can be separated with little breakage. The bulbs may be divided with a knife at the point where they adhere to each other, or they may be parted by hand, putting them singly, or two or three together, in pots from 5 inches to 7 inches in diameter. When growing, a copious supply of water is required; consequently the pots must be well drained. This Eucharis will thrive in good turfy loam, to which add as much sand as will keep it porous. Pot firmly without injuring the roots, and cover the bulbs to about half their depth. Do not give much water until growth has commenced. Place them at once in a temperature of 70°; if they can be plunged in a bottom heat 10° higher, they will progress all the quicker. In this temperature they will grow fast. Shade slightly during the hottest part of the day in very bright weather, but in doing so do not darken the plants too much, or they will grow up weakly. Let them have a moderate amount of air early in the day, shutting it off in good time in the afternoon, and syringing overhead at the same time. They will bear during summer as much heat as the generality of stove plants. It will not be advisable the first summer to rest the smaller bulbs for flowering, as it will be better to get as much growth as possible. Early in August shift them into pots two inches larger than those they are in; continue to give them a liberal amount of heat and moisture, both at the roots and in the atmosphere, until autumn, by which time they will have made considerable progress.

DRYING THEM OFF.—At this time, when the leaves are fully matured, cease shading, and gradually withhold water till the soil gets so dry as to cause the leaves to flag slightly, but so as not to injure them, giving a little before this occurs, just to freshen them up, and again alternating the treatment by drying and then slightly watering them. Continue this treatment for a month, during which time they can be kept in a night temperature of 55° with a few degrees more warmth during the day, when they may be well watered and placed in 10° more heat; if they can be plunged in 10° higher than this it will be still better. So managed they will quickly push up their flower stems, and they should be encouraged by supplying them with plenty of water at the roots, and as much heat as is consistent with the diminished light of the season. Thus treated, when their blooming is over they will grow on slowly through the winter, and after their full development they may again be submitted to the drying and resting process, after which increase the temperature, give water, and treat them in every way as before. This alternate growing, resting and flowering can be practised two or three times in the year with the best results without injuring the plants in the least. Do not at any time pinch them as regards pot room. When the soil is well filled with roots they will be much benefited by a good soaking with manure water once or twice a week. For general purposes moderate-sized plants in 12-inch or 13-inch pots will be found the most convenient, but where it is desired they may be grown on into specimens 6 feet across by simply using pots or tubs proportionate in size. When large they make fine exhibition plants, their general appear-

ance being such as to contrast well with their associates.

E. candida differs little from E. amazonica, except that the flowers are much smaller and more elegant; the foliage is also distinct. It is a native of the United States of Colombia, and a most desirable kind.

E. Sanderi has pure white flowers in the way of those of E. amazonica, 2½ inches to 3½ inches in diameter; it will be an acceptable addition to stove bulbous plants. It comes from New Grenada.

INSECTS.—Most of the pests that infest stove plants will live upon Eucharises, but from the nature of the leaves, they are much easier to destroy than on many plants. If thrips or green fly make their appearance, fumigation will generally be found to be the best remedy, but from the regular use of the syringe these and red spider are not often troublesome. Should scale or mealy bug gain a footing they must be diligently sought for and removed by means of sponging, using a soft brush for the bases of the leaf stalks where the bugs will be found to lodge, for, if not destroyed, they will increase to an extent that will both disfigure the plants and do them serious injury by the constant cleaning process which their presence makes necessary.

T. BAINES.

CANNED GOODS.

To say that the canned goods trade of the United States is already an enormous industry, does not half express the truth. Nevertheless, as great as it is, it is only in its infancy. There is scarcely any part of the civilized world which does not receive more or less of the stock of American packers. Even the naked warriors of the Zululand and the explorers of the Congo, the islanders of the South Pacific and the inhabitants of the Arctic regions, are more or less familiar with the picturesque and highly colored labels of American canned goods. The half tamed and half frozen natives of Nova Zembla and Labrador, in opening our "canned salmon" and "shadines," have discovered delicacies equal even to their whale blubber and porpoise fat; and the man-eating New Zealander has forgotten his cannibalism in his enthusiasm over "Boston Baked Beans," while pyramidal mountains adorn the windows and shelves of every grocery store in our own land. A thousand ships and steamers carry these goods over every sea, lake and river of the globe, and they are included in the "ship's stores" of the war vessels of every navy and steamship line in the world.—*The Wine and Fruit Grower.*

WHAT ROSES TO PLANT.

A common error committed by beginners in Rose culture is attempting to grow varities that are of delicate habit; attracted by great beauty of flower, or fragrance, they do not consider, or do not understand, that vigor of growth, perpetuity of bloom, and perfect hardiness are very seldom combined with the qualities which have allured them.

The most popular Roses are the Hybrid Remontants; these are moderately hardy, and produce flowers of the highest finish. Among them none are more desirable for tyros than *Alfred Colomb*, *John Hopper*, and *General Jacqueminot*. These three varieties probably absorb more of the desirable features that go toward making the perfect Rose than do any others which could be named; they blend well, and are very effective planted in a bed together or separately.

A pleasing departure from the usual method of growing Roses is found in the pegging-down system. In this way the long shoots are carefully bent down,

and fastened to the ground by means of hooked sticks or pegs. As a result of this system, an immense quantity of bloom is produced. True the individual flowers are not of equal finish to those grown in the ordinary way, but we get a mass of color, a striking effect, that is not otherwise to be had. I do not advocate this method to the exclusion of the other, but its occasional use will certainly be satisfactory.

Besides planting Roses in beds, we should scatter them through the borders of our gardens, giving the more favored positions to the delicate kinds. Among these we find *Eugenie Verdier*, the most beautiful of the Victor Verdier type, a Rose of very delicate tint, —deep silvery,—pink tinged with salmon; lovely in the bud and in the open flower; attractive as maid or matron. Not only the flowers, but the foliage of this variety is most pleasing. Another variety which is beautiful in both flower and leaf is *Charles Lefebvre*. This has the thick texture of petal, and something of the same form as *Eugenie Verdier*, but the color is that of *General Jacqueminot*, deepened by a shade of satiny-purple.

Among the somewhat neglected Roses are *Marguerite de St. Amande*, a deep pink, beautiful in the bud state, and flowering through the summer and autumn months. *Baroness Rothschild*, a blush-pink, with exquisite cup-shaped flowers; single blooms of this kind, during December and January, sell in New York for one dollar, and even two dollars each. It has always been a great favorite with exhibitors. *François Michelon* is a striking variety, intermediate in character between its parent *La Reine* and *General Jacqueminot*; it has large, deep rose-colored flowers varied with lilac, of splendid globular form. A valuable feature is its late blooming, the flowers not developing until most others of the same class are past their prime. *Elise Boelle* is perhaps the finest white Rose that we have; it blooms profusely all through the summer; has full globular flowers, of the most perfect form; the center is generally tinged with blush. It is not possible to imagine a flower of greater beauty.

Moss Roses have been favorites in our gardens, but it is wonderful how many inferior varieties are grown; sorts are disseminated that are not mossy, are not beautiful. None of the Moss Roses will compare with those of other classes as regards the open flowers. It is the fine buds that make them so attractive, and if a Moss Rose has not a well-formed bud it is worthless. The best of the Mosses are *Gracilis*, *Crested*, and *Common*, a triad whose crested loveliness has a common grace.

Not one of the least of the qualities we desire in a Rose is fragrance. In this regard all classes must do homage to *La France*, the sweetest of all Roses, Compelled to choose one variety, this should be ours. To be sure it is rather tender, but it can easily be protected, and so winter safely. It does not always open well, but it is a simple matter to assist,—an operation not practicable with most varieties that do not open perfectly. If *La France* does not develop well, by pressing gently with the fingers the point of bloom, and then blowing into the center, the flower will almost invariably expand, the pent-up fragrance escape, and almost intoxicate with delight our sense of smell.

Not enough attention is given to the Tea Roses and Bourbons. The Hybrid Remontants justly claim our first attention when they are in their perfection; but after their first blooming is over, throughout July, August, and September, they are much less attractive than many monthly Roses. Varieties like *Bougère*, *Gerard Desbois*, *Homer*, *Sombreuil*, *Madame de Vatry*, *Marie Van*

Houtte, Madame Caroline Kuster, will give a continuous supply of flowers throughout the summer and autumn.

The fact of Tea Roses being tender should not debar us from their culture; the truth is, they have in this matter been abused. The sorts I have named are in reality a little more tender than *La France*, the Hybrid Noisettes, and all the *Victor Verdier* race of Hybrid Remontants. If earth be hilled up about the plants, and then a slight covering of some loose material, like branches of evergeeens, be given, the hardier sorts of monthly Roses will winter in safety. There is sometimes a loss of plants, but the percentage is light, very little more than happens to the so called Hardy Roses.

In giving this protection, care must be observed not to smother the plants by entirely excluding the air; this never occurs from the use of evergreen branches, but when straw or litter is taken, sticks or boards should be used to prevent the material from matting together. This is one of the cases where is is possible to kill by mistaken kindness. If it be objected that this covering of the Roses is troublesome, then we must reply to the objector,—you are no true lover, you are but a false knight; you cannot have beautiful Roses in your garden, because you have them not in your heart.—*H. B. Ellwanger, before the Western N. Y. Horticultural Society.*

ALLIGATOR PEAR.

The Alligator Pear, *Persea gratissima*, is sometimes an immense tree. The fruit, which is occasionally seen in New York markets, is pear-shaped, with deep green or dark purple skin, according to the variety. The pulp is firm, buttery yellow, surrounding a large, hard stone.

In Brazil they fill the same place as melons in the United States, being eaten at breakfast with sugar or pepper and salt, according to taste. A liking for Abacaxe, as this fruit is called in Brazil, is an acquired taste, but one soon becomes very fond of them. They cost only from one to three cents each, and with oranges and bananas are the most common fruit hawked round the streets by the fruit-sellers, who carry them upon their heads in large flat wooden trays.—*American Garden.*

CELERY.

Celery requires a cool climate. South of the fortieth parallel, the climate is too warm for the best production of this toothsome vegetable. As we approach the great lakes, we find the temperature becoming more suitable for Celery, and by the time we reach them we find it all the gardener could desire.

Celery needs a cold, heavy, deep, very rich soil. The soil must be made of this character artificially, if it is not so naturally, to raise Celery profitably. The ground must be well manured; that is, a great plenty of fertilizers must be used, as the plant is a greedy feeder, and there is very little danger of getting the land too rich. Any good manure is suitable for it; but nothing equals barn-yard manure well worked over.

The old system of cultivation in trenches has been abandoned by the most progressive gardeners. It was troublesome and expensive, and it has been found that fully as good results could be attained by surface cultivation. But along the fortieth parallel, and south of it, Celery cannot be bleached in the open ground, as is done in colder countries. The climate is too warm for this, and when attempted, the stalks scald and rot.

Celery should be sown in the seed-bed in the spring, as early as the ground can be brought into condition for seed-

ing. The ground should be thoroughly pulverized, and the seed sown in rows twelve inches apart, either by hand or with a seed drill. Most gardeners prefer to use a drill, and undoubtedly the best results are attained by its use. Great care should be taken to use only first-class seed. Celery is a delicate plant, slow and weakly to start, puny and slow-growing. From the seed-bed it must be transplanted to the growing-bed. This last bed should be prepared the same as for late cabbage. Manure heavily and pulverize thoroughly.

A common mistake is made in transplanting too early, often June first. Except in the northern part of our country, the weather will be too hot to bleach Celery grown so early, at the proper time. It is the better plan to transplant late, say about the middle of July.

In setting out, be careful to press the dirt firmly around the plants. The benefit of this is greatest in a dry season, but important at all times. Do not plant too deep. This is a common error. The soil should not cover the crown of the plant. Plant in rows three feet apart, putting the plants six inches apart in the row. After planting, keep clean with plow or hoe till the first or middle of September. Then it must be "handled."

The handling process is simple. Hold the Celery compactly in one hand, and bring the soil up around it with the other to hold it upright and close together.

The next operation is bleaching. It can be bleached in the open ground by banking the earth up around it with a spade till it reaches the tops of the leaves. This should be done about the first of October. (September in Ontario.)

After handling late Celery, the earth can be drawn up around it with a hoe to prevent its freezing. It will stand considerable frost if the soil is around it. The later it is left in the ground the longer it will keep; therefore, Celery for spring use should be left in the ground till in danger of freezing.

This brings us to the process of storing for winter use. Dig a trench as deep as the Celery is high, and the narrower the better, say eight inches in width. Dig up the Celery, keeping a little dirt fast to its roots, and pack it in the trench in an upright position, just as it grows. Leave it in this shape till the latter part of December (November in Ontario, the time depending somewhat upon the severity of the weather), when a light covering of straw should be put upon it, and more covering added later, as is required to keep it from freezing.—*Am. Garden.*

THE YELLOW WOOD.

This handsome little tree, perfectly hardy in this country, is not so frequently grown as its merits certainly deserve. It has smooth bark, smooth pinnate leaves, in young vigorous specimens measuring from 1 foot to 1½ feet in length, but in old ones about half that size, with from five to eleven roundish or oval shortly stalked leaflets of a bright green colour. The leaf-stalks are hollow at the base, and enclose the leaf-buds of the succeeding year, just as is the case in the Plane (Platanus) and some other trees. The large pendulous panicled racemes of showy white fragrant flowers, somewhat larger than those of the Locust Tree (Robinia Pseudacacia), droop from the ends of the branches. Old trees at Kew flower frequently, and pods which Loudon states in "Encyclopædia of Trees and Shrubs" are never produced in England, are now and then ripened. Two of the largest specimens in the Kew arboretum measure respectively as follows: Circumference of trunks near the ground, 3 feet 10 inches

and 4 feet; diameter of heads, 27 feet and 29 feet; height of each, 28 feet.

On account of its graceful habit, the beauty of its bright green foliage in spring and summer, the showy flowers and the brightness of the rich yellow autumnal tint assumed by the decaying leaves, the Yellow Wood is eminently a fit subject to be generally planted for effect in parks and pleasure grounds. In its native country it flowers in May and June, but in Britain a month or so later.

The name Cladrastis, according to its author, Rafinesque, means "brittle branches." For a long time after its separation from the genus to which it was first referred (Virgilia), C. tinctoria was the only known species; but some years ago, long after the publication of Loudon's "Arboretum," the Russian botanists discovered a second, C. amurensis, in Amurland.

C. TINCTORIA seems but little subject to variation; no varieties are mentioned in any of the numerous tree catalogues and books I have looked through, with the single exception of M. Lavallèe's "Arboretum Segrezianum," where the name "gracilis" is given to a form I have not seen.

In his "Catalogue of the Forest Trees of North America," Professor C. S. Sargent gives the following information respecting the Yellow Wood: It is found from Central Kentucky, on the banks of the Kentucky River south, to Middle and eastern Tennessee. The wood is of a clear yellow colour, is said to split with difficulty, and to make valuable fuel. It is a small or medium-sized tree; found principally along streams or on rich hillsides; rare, and in danger of extermination for fuel.

C. AMURENSIS differs from the above in its larger buds, olive-green bark—in old trees peeling off in flakes like that of our common Birch—duller green, more leathery leaves, and in its erect panicled racemes of more densely packed, much smaller, more shortly-stalked flowers. Although not so handsome or graceful a tree as the Yellow Wood, it is well worth a place in any garden; it is perfectly hardy, and flowers freely in a younger state than C. tinctoria. In spring the peculiar grey-green of the silky pubescence which clothes the young leaves gives this an appearance totally unlike that of most other hardy trees. When seeds are not procurable, perhaps the most ready means of propagation is by grafting, using Sophora japonica as a stock.

In its native countries—Manchuria, where it ranges in the basin of the Amur River from lat. 50° 15' to 52° 20' north, and the Japanese island of Jesso—it makes a small tree of 40 feet in height, with a trunk 6 inches in diameter, and drooping, densely leafy branches.

Sir Joseph Hooker, in the *Botanical Magazine*, thus speaks of this tree: "It is not to be wondered at that, when the subject of the present plate was described, it was supposed to be a new genus, for at that time the close affinity of the floras of North-eastern Asia and the Eastern United States was not generally recognised, and the affinity of Maackia with the hitherto monotypic genus Cladrastis could not have been anticipated. Nevertheless, these two geographically widely severed plants are unquestionably congeneric, and not to be separated by even a sectional character. It thus adds another to the remarkable assemblage of genera found in the two countries indicated, but not in the intervening territories of Western America and of which Professor Asa Gray has made such good use in tracing the origin and migrations of the North America flora.—*The Garden.*

PLUM AND CHERRY TREE BLACK KNOT.

This season has been favorable for the development of the disease of the plum and cherry trees known as black knot. This is an old, long-standing trouble of the orchards, and has been the subject of much discussion in the agricultural and horticultural papers for many years. The "diseases," so-called, of plants are now divided under three heads: First, those caused by insects, as the various galls, &c.; second, those of fungous origin, like the rusts, smuts, mildews, &c.; and third, those troubles that are organic, as far as they are understood. It is safe to define the third class as including those diseases that do not belong to the first and second classes—the plants are "out of sorts."

The black knot was long believed by entomologists to be of insect origin, and they seemed to have a very strong argument. The eggs and young of insects were usually found within the substance of the knot, and their presence was strong evidence of the cause being insects. All sorts of distortions, like galls on willows, oaks, &c., were known to be the work of insects—gall-flies, &c. Within the past ten years, the black knot has been carefully studied by several experts in fungi, and under the higher powers of the microscope the cause of the peculiar distortions became evident. The black knot is now well demonstrated as belonging to the second class of diseases or disorders, and is therefore of fungous origin. Among other things, it was shown that the same kind of insect was not always present; in fact, no insects or eggs were found in the early stages of the knot. But instead, the substance of the infested part is found to contain a multitude of small threads or filaments of a fungus.

It may be well to state that a fungus is a plant of a very low order, and with a very simple structure. Among the most familiar members of this group of flowerless plants are the various moulds that grow on bread, cake, cheese, &c., and make sad havoc in the housekeeper's pantry in midsummer. The toad-stools and the mushroom are larger examples of the class in question. The black knot fungus is known to botanists as *Sphæria morbosa*, and attacks the young branches of the plum and cherry trees in the spring. By the first of June the infested parts have swollen considerably, and soon after these portions have cracked longitudinally in one or more places. The surface thus exposed is soft or spongy, and quickly turns to an olive-green colour. This colour is due to the formation of a multitude of minute spores that form on the tips of plants, extending from the surface. The knot continues to increase in size until past midsummer, and frequently the branch becomes bent to one side, or otherwise distorted, owing to the irregular growth of the fungus. It is seldom that the knot extends equally on all sides of the branch.

As the season advances, a second form of spore is formed, and it is within the substance of the knot. The surface spores above mentioned are quickly grown and serve to spread the disease from branch to branch. A spore has the same office to fill as a seed, but differs in structure. Spores are, in short, the seeds of flowerless plants. The internal spores of the black knot are formed slowly, and designed to carry the life of the plant through the winter. They germinate in the spring. Very many fungi have two or more kinds of spores, some for quick propagation and others for the preservation of the species.

The fact that insect eggs and "worms" are usually found in the substance is

easily reconciled with the present known cause of the knot. The soft substance developed by the fungus furnishes a fine home for voracious larvæ, and the mother insects make the most of the feeding ground thus provided. The remedy consists in the removal and burning of all affected parts. The branch should be cut several inches below the swelling, to insure the removal of all the "disease." If the parts removed are not burned, the spores will continue to form for some time. The knots are most easily seen when the trees are free from leaves in the winter season, but they should be removed whenever found. The choke cherry is a favourite host of the knot, and all the hedge-rows should be cleared of this kind of tree. Look for the black knot, and whenever found, cut and burn it.—B. D. H., *in Country Gentleman.*

FRUIT INSECTS.

A young cultivator, who is about to set out a fruit garden with a general supply of fruits, wishes to know what are the most formidable insects to be generally feared, and how to meet them to best advantage; and also if there are any other troubles to guard against. In answer, a book might very properly be written on the subject, and we can therefore on the present occasion give only a few condensed and leading statements.

THE APPLE.—The most formidable enemy is the codlin moth, and the remedy is spraying with Paris green in 700 times as much water, two or three times when the apples are as large as cherries. The canker worm is killed by the same treatment earlier in the season. The orchard caterpillar is easily destroyed by well-known means. The borer is killed by punching in its hole with a flexible wire. With these remedies promptly applied, it is not difficult to have good crops of fine apples, but good culture and manure are also indispensable.

THE PEAR.—The great drawback is the blight. A remedy, pretty efficacious, is cutting off promptly all the affected limbs and burning them; and the best preventive is planting those sorts least liable to the disease, as the Seckel, Winter Nelis, Duchesse, Clairgeau, Anjou, &c. In some places the curculio disfigures the crop, and the young fruit is to be treated the same as for the plum and the codlin worm the same as for the apple.

THE PLUM has its great enemy the curculio, usually regarded as too formidable to be conquered. We have for many years found the insects easily destroyed by jarring down on a stiffened sheet carried on the operator's left arm, while striking with a heavy hammer in his right hand on an iron plug, when they are quickly killed by a pinch of thumb and finger. The whole expense for a season is about six cents a tree, but there must be no intermission. Failure results from the use of padded mallets and other feeble appliances. The black knot sometimes destroys plum trees, but it is easily kept off by prompt excision.

The drawback of *peach culture* is the yellows. When first seen in an orchard, the diseased trees must be grubbed up and burned. The grub in the bark at the root is easily cut out and destroyed. To keep a peach orchard in goodbearing condition, the ground must be kept mellow by cultivation, and the limbs must be kept short by cutting back in spring.

The CHERRY is troubled with the curculio and with birds. The former is prevented by the same method as described for the plum; it is hard to say what is the best treatment for the birds. Some cultivators assert that

they are more formidable than all insects taken together, in their attacks on cherries, strawberries, blackberries, and often on early pears and peaches.

CURRANTS are easily protected from the currant worms by dusting or spraying with white hellebore, but the operation must never be deferred till next day after they are first seen; the same remedy protects gooseberries.

Nearly all these remedies, if promptly, intelligently and unremitting applied, answer their intended purposes well, and do not require so much labor as the proper cultivation of the soil. The preceding are the principal enemies of the fruit crop, although a number of others of less importance might be named.—*Country Gentleman.*

SUMMER AND AUTUMN BLOOMING SHRUBS.

The great majority of ornamental shrubs produce their flowers in spring, and we often see collections all aglow in the early months, that show nothing but foliage for the rest of the year. With proper care in selection, the shrubbery may be made attractive at all seasons. In choosing shrubs for planting, regard should be had not only to flowers, but to fruit, as some are more ornamental in fruit than in flower. Of the late blooming shrubs, none are more desirable than the Japanese *Hydrangea paniculata grandiflora.* This produces at the end of each stem a large pyramidal cluster of flowers; these are at first, pure white, gradually becoming pinkish, the color deepening, until frost comes. By pruning this shrub severely the panicles may be produced of enormous size, so large as to require a stake for support. It is perfectly hardy, and one of the most valuable introductions of late years. A capital subject for the lawn is the Small Buckeye, (*Æsculus parviflora,*) of the Southern States. It forms a round headed, dense clump, with many stems, and in July and August is covered with panicles of white flowers, forming a most beautiful object. The old Rose of Sharon, *Hibiscus Syriacus,* (called in the old catalogues *Althæa frutex*), is a most desirable shrub. It has been much improved of late years, and the best nurseries now offer both double and single varieties, in color from white to deep purple. As these bloom in August and September, when few others are in flower, they are most valuable shrubs. They need a close pruning each year, otherwise they will grow very straggling.

Among shrubs valuable for their showy fruit, the different species of *Euonymus*, or Burning-bush, are desirable. The native *E. atropurpureus*, or "Wahoo," is excellent, but our favorite is *E. latifolius*, the "Broad-leaved Burning Bush," from Central Europe. This is as yet rather scarce, but would be propagated more generally, were its merits known. In selecting shrubs for their autumn effect the old "Smoke-tree," often called Purple Fringe (*Rhus Cotinus*), the "Wig-tree" of England, should not be forgotten, as it is perfectly hardy and very showy. Among climbers, the Japanese Halls' Honeysuckle (*Lonicera Halliana*, is a most valuable introduction. It blooms, and keeps blooming, and never tires. Our native Trumpet-Creeper (*Tecoma radicans*), and its oriental brother (*T. grandiflora*,) are valuable for their rapid growth, and their abundance of trumpet-shaped, orange-scarlet flowers, produced from July to October. Some of the improved varieties of Clematis are late bloomers, and our native Virgin's Bower (*C. Virginiana*) gives a wealth of white flowers in August, and its clusters of fruit are beautiful later. Among the vines, ornamental for their fruit, the Roxbury Wax Work (*Celastrus scandens*) should not be over-look-

ed. If allowed to run upon a tree, it will soon kill it, but upon a trellis it is valuable for its glossy foliage and scarlet fruit. By proper care in selecting, the shrubbery may be attractive from early spring until frost comes, and even later.—*American Agriculturist.*

PEACH YELLOWS.

A series of experiments have for some time been carried on by Professor D. P. Penhallow, at Houghton Farm, to discover the cause of, and remedy for, peach yellows. The conclusions reached are :

That peach yellows is not caused primarily by fungi or parasitic plants, although they may accompany and aggravate it by their attacks on the plant weakened by disease ; nor is it caused by too much dampness or heat in the atmosphere, nor by unseasonable frosts or excessive winter cold, nor by want of proper drainage in the soil, nor by the use of fermentable stable manure. The primary cause he considers to be a deficiency in the soil of certain food-constituents, especially potash and chlorine, which are supplied in the well-known German potash salt, muriate of potash.

The most striking symptoms of the disease are—unusual features in the cellular structure and contents, which are evident under the microscope only; an excess of lime in wood and fruit, and deficiency in potash and chlorine, which can be detected only by chemical analysis ; premature ripening of the fruit ; smaller leaves, with a red or yellow color in place of the usual green ; a dark and parched appearance of the bark on the main limbs. The disease appears gradually, first on young branches, from which it spreads over the whole tree ; it can be detected by microscopic examination of the cell structure and contents in advance of the appearance of any outward symptoms ; of these he considers the premature ripening of the fruit and an unnatural color and flavor as the most important.

In way of possible remedies, use stable manure with caution ; trim off diseased branches as far as possible without too serious mutilating the tree, and cultivate carefully. Apply the following mixture of commercial fertilizers : 25 lbs. kieserite, 100 to 150 lbs. muriate of potash, and 450 lbs. dissolved bone-black, at the rate of 6 to 9 lbs. of the mixture to each tree ; if the trees are badly diseased, add more muriate, about 4 lbs. to each tree, in Spring before growth begins, and in the Fall. Spade the ground as far as the roots extend, mulch with the inverted sods or straw, and apply the fertilizer on this mulch, thus avoiding too near an approach to the roots. The evidence of this theory of the cause is found partly in the cures that have been effected by this treatment with muriate of potash. The remedy is a simple one for so destructive a disease, and is well worthy of careful trial by all whose peach orchards are attacked by it.—*The Wine and Fruit Grower.*

THE ONION MAGGOT.

"Coal ashes at the rate of about 25 bushels per acre are now asserted to be a perfect specific for the onion maggot, and as they are easily procured and applied, a trial at least could be given at a very small expense."

The above seems to be thrown out without any statement of experiment by any one who vouches for the correctness of the assertion as proved in his own experience. In some places this maggot has been very destructive, and growers of onions would be most thankful to be put in the way of a "perfect specific."

THE EARLY CLUSTER BLACKBERRY.

This was a chance seedling, discovered about ten years since on the farm of Charles W. Starn, of Camden County, N. J.

It has so far proven very vigorous, healthy, and wonderfully productive. We are told that thirteen quarts of ripe berries were picked from a single hill at one picking. It is of good size and of excellent quality.

A new blackberry is only a blackberry and might at first sight be considered of little account, but when it is known that hundreds of car-loads are grown and marketed yearly from the three States of New Jersey, Delaware, and eastern part of Maryland, and when we take into consideration the thousands of acres of vines that are required to produce such an amount of fruit, we are led to believe that a new blackberry, even if only a blackberry, if an improvement on all the older varieties, might not be such a small affair.—*Farm and Garden.*

GRAPES IN THE LAKE ERIE VINEYARDS AND IN NEW JERSEY.

George W. Campbell, widely known as a skilful grape culturist, in a letter, dated July 24, says: "I am sorry to say that in a recent examination of the vineyards on the islands of Lake Erie I found them generally in a very unpromising condition, the early appearance of rot and mildew having already so much injured the grapes that one-third of a crop would probably be a full average estimate, with favorable weather the remainder of the season. Catawbas seem most injured, Concords next, and Ives and Delawares the least."

A cultivator in the northern portion of New Jersey writes us: "I have had the blues for the last three weeks over my grapes, which are mildewing and rotting badly. I have been treating it with sulphur, a thing I never did before, and bagging the best clusters, hoping to save some of the unaffected ones. In a recent letter from Mr. Downing, in answer to my inquiry, he says: 'If I begin using sulphur as soon as the leaves are the size of a half dollar, and renew it after each rain, it will generally prevent it, but not always.' The fact is the mildew did not appear till the grapes were set, and I did not apply sulphur till then."—*Country Gentleman.*

SALVIAS.

For the production of a brilliant, massive, floral effect during late summer, and all of autumn until frost, no plant can compare with the Scarlet Sage, *Salvia splendens.* Its large, pendent, plume-like racemes of brightest scarlet form a striking contrast against its glossy green foliage, and in fact against that of any green-leaved plants and shrubs.

The plants may be grown from cuttings or from seed, the latter method being the one generally adopted. The seed is sown very early in spring, in a greenhouse or hot-bed; when of proper size, the seedlings are planted in small pots, and toward the end of May transplanted to the open ground. They are now raised in immense quantities by florists and nurserymen, and the young plants may be purchased cheaply in every flower market. The Salvia is naturally a rank grower, forming long-jointed stalks; and in order to produce its best effects, the plants must be pinched back from the start, so as to shape into a compact bush.

They delight in deep, rich soil, and should be watered evenings during very dry weather. Toward the end of September they may be taken up, potted in soil consisting of three parts loam, one

leaf mold, one manure, with a sprinkling of sand, or in any good, rich soil. If lifted carefully, shaded for a few days, and then brought to a sunny window, they will continue to bloom for some time.—*American Gardener.*

RASPBERRIES IN NEW JERSEY.

Among these, Early Prolific is the earliest and most productive of the red varieties, and has always given us better results in every respect than Reliance. Highland Hardy is a little earlier, but too small and light a bearer. Turner is a little better, but too small. Cuthbert is large and productive when well cultivated and thinned. Superb is large, productive and promising, and there is little difference between this and Montclair, the latter being the sweeter. A lady residing about a mile from here, last week requested me to call and see her Montclairs. I did so, and a finer sight in the raspberry line I never beheld. The plants, five feet high, were loaded outside and in with berries. Ripe specimens, three-fourths of an inch in diameter and seven-eighths of an inch long, were abundant. She thinks it "just good enough." [We have fruited this sort several years and find it valuable.—EDS.] Brandywine is of no account save to produce plants The little fruit which it gives is hard, dry, and destitute of good qualities. Clarke produces fine berries, but they require careful handling even for home use, and the plants are not fully hardy. Shaffer is a very vigorous grower, the fruit resembling red black-caps till fully ripe, when it assumes a darker color. Some of the berries are monsters in size, [averaging with us about seven-eighths of an inch in diameter.—EDS.] It is about the same in quality as the Rochelle, which we have had to discard on account of its liability to disease. The Caroline gives us great satisfaction, being hardy, healthy and productive, the berries large, very attractive in colour and admirable in quality. It finds its way to our table oftener than any other.—E WILLIAMS, *in Country Gentleman.*

ROSE PAQUERETTE.

This Rose has only been brought into prominence within the past year or two, yet it is rapidly making its way into popular favor. It is a charming little bush, resembling a dwarf miniature form of Aimee Vibert, and, like it, bears comparatively large clusters of small white flowers, but unfortunately almost, if not quite, scentless. A very useful purpose to which this Rose can be put is to grow it in 5-inch or 6-inch pots, and employ it for greenhouse decoration during the spring and early summer months. It is much better fitted for pots than for the open ground, as, being dwarf, the flowers get disfigured by heavy rains. It can be readily struck from cuttings taken off at any time when the young shoots are in a half-ripened condition; insert them in pots of sandy soil, and keep them close till rooted; then pot them off, and when requisite, shift them into 5-inch pots. If cuttings are taken now and placed in a gentle heat, they will root very quickly, and can be potted off and established in small pots before winter, when the protection of a frame must be accorded them. When growth commences in spring the strongest may be potted on, and will form little flowering plants the next summer; but the first season. free growth rather than flowers should be encouraged, so as to obtain good plants for the following year. Some of the most likely may then be introduced into a little heat as early as the end of February, and, by starting them in successive batches, a display of flowers may be kept up for a

long time. Good loamy soil, with, if too heavy, a little leaf-mould and sand added to it, suits this Rose well.—H. P. *The Garden.*

MANGOES.

The Mango, *Mangifera Indica*, is one of the most beautiful of fruit-bearing trees. Originally from India, it has become acclimatized in all tropical countries. In Brazil it grows to a large size, but we have never seen trees which had attained the magnitude to which they grow in their native country.

The foliage is deep, glossy green when old, the young leaves varying from pink to deep browny-purple. The flowers are small, yellowish-pink, in branching panicles. The fruit is one-sided, dark green, but often with bright, rosy cheek; is frequently, when fully ripe, all bright yellow. The pulp is fleshy but full of fibres which cling to the seed, and as there is a great deal of juice it is more difficult to eat a Mango than a cling-stone peach. There is no fruit which varies more in quality than the Mango. The best are equal to a delicious peach, while the common kinds have not inaptly been likened in taste to a mixture of tow and turpentine. We have never but twice tasted fruit from any tree that did not have a slight flavor of turpentine, but as one of these trees is in our own orchard and has a reputation in the neighbourhood as the best Mango in Para, we can indulge our taste for Mangoes to its full extent. This fruit is, however, not considered very wholesome, and although the natives eat it freely, the stranger, until fully acclimated, should beware of Mangoes. The Mango season is from December to March, but in the climate of Para this fruit, like many others, can be had in greater or less quantity at all seasons.—*Am. Garden.*

PRICES OF CANNED GOODS.

The following are the quotations for these goods on the 4th of September last as reported by *The Wine and Fruit Grower*, published in New York:

Canned Fruits.—Apples, 3 lbs., $1 10; gallon, $3 25. Blackberries, 2 lbs., 80c. Blueberries, 2 lbs., $1 30. Cherries, white, 2 lbs, $1 85; red, $1. Damsons, 2 lbs., $1; egg plums, 2 lbs, $1 50; green gages, 2 lbs., $1 50. Gooseberries, 2 lbs., $1. Peaches, standard, 2 lbs., $1 40; seconds, $1 20; standard, 3 lbs., $1 90; seconds, $1 50; pie, 3 lbs., $1 10; 6 lbs., $1 75; gallon, $3. Pineapples, standard, 2 lbs., $1 40; Bahama, $2 25. Pears, common, 2 lbs, $1 25; Bartlett, $1 50. Quinces, heavy syrup, 2 lbs., $1 75. Raspberries, 2 lbs., $1 80. Strawberries, 2 lbs., $1. Whortleberries, 2 lbs., 90c.

Canned Vegetables.—Asparagus, 3 lbs, $3. Beans, Lima, 2 lbs., $1 20 to $1 15; string, 75c.; Boston baked, Lewis, 3 lbs., $1 60; do., Curtice, $1 60. Corn, Winslow, 2 lbs., $1 35; Burnham & Morrill, $1 25; New York State, $1 10; Baltimore, 90c.; Harford Co., 95c. Peas, marrowfat, 2 lbs., $1 10; early June, $1 25; sifted, $2. Pumpkins, 3 lbs., $1; gallon, $3 25. Squash, 3 lbs., $1 40. Succotash, Baltimore, 2 lbs., $1 30. Tomatoes, standard, 2 lbs, 85c.; 3 lbs., 95c. to $1; seconds, 3 lbs., 75c.; standard, gallon, $3 15.

Fish.—Lobster, 1 lb., $1 50; 2 lbs., $2 40. Mackerel, 1 lb., $1 15. Oysters, standard, 1 lb., 92½c.; 2 lbs., $1 60; light weight, 1 lb., 52½c. Salmon, 1 lb., $1 40; Columbia river, $1 50; to arrive, 1 lb., $1 45. Sardines, quarters, 11c.; halves, 17½c.; quarters, American, 6¼c.; halves, 10c.

The same authority gives the following statement of the present condition and outlook of the canned goods market:

FRUIT.

Apples are short, both in New York State and West, and present prices are not likely to recede.

Blueberries are short also, and have advanced 10c.

Cherries also short, and are held firmly at $1 45 to $1 50.

Plums are short in New York State, but a fair crop South and in California.

Gooseberries are plenty, and lower.

Peaches short in Delaware, Maryland, and in the West, and have advanced 5c. to 10c.

Pineapple stock is fair ; no change.

Pears.—Standard goods are lower by 5c., and new stock abundant.

Raspberries.—A large pack in New York State.

Strawberries not very abundant, and pack light.

VEGETABLES.

Asparagus.—About fair stock, and prices range from $2 75 to $2 90.

String Beans.—A large crop, and lower than ever before.

Corn.—Reports from Maine and New York State show backward condition of the crop ; the output is large, and if frosts hold off, the crop will be equal to demands.

Peas.—A very light crop, and large stock of Junes lower than marrows.

Pumpkins.—Fair crop.

Squash.—Light crop, and prices higher.

Tomatoes somewhat of a conundrum, but believed to be about the same as last year.

BOOK NOTICES.

LOVETT'S ILLUSTRATED CATALOGUE for Autumn of 1883, is very handsomely got up, with numerous nicely executed cuts of fruits, &c., and full of information about new and old varieties.

FORESTRY is the title of a monthly magazine, edited by Francis George Heath, and published by Wm. Rider & Son, London, England, and to be had of L. Van Nostrand, 23 Murray Street, New York. The August number contains among other very interesting papers one from the venerable William Little, of Montreal, on the alarming destruction of the White Pine in American forests.

SCIENCE for August 24th has a very interesting paper on the ice-huts of the natives of North Hudson's Bay ; but its great attraction is the papers read before the American Association for the advancement of science at its recent meeting. It is published weekly at Cambridge, Massachusetts, by Moses King.

MILFORD'S MICROCOSM, edited by A. Wilford Hall, Ph. D., is published every month by Hall & Co., 23 Park Row, New York, at $1 per year. Its scientific discussions are very interesting, even though they strike often at the root of our early lessons in philosophy. It teaches that every force in nature is as really substantial as are the trees, rocks, &c., of the material realm. For example, sound is not air waves breaking upon the tympanum of the ear, but a substantial entity.

DIO LEWIS' MONTHLY for August is before us, in which many valuable suggestions are given in a very readable form, concerning the laws of life and health. We are not convinced that horseback exercise is an unfailing cure for consumption, though we have no doubt of its being a very healthful exercise. The Insane Asylum reminiscence, if not fiction, indicates that these institutions need most thorough supervision. We had supposed that the foolish fashion of tight lacing was exploded, and its injurious effects so well understood that further lecturing on this subject was not needed. We commend the article on Woman's figure to the perusal of those who favor wasp-waists. The article on the function of sunshine deserves to be generally read and pondered. Published by Clarke Bros., 68 and 69 Bible House, New York.

MISCELLANEOUS ITEMS.

INSECTS ON ROSES.—Vick's *Monthly* states that a good remedy for the insects which infest the rose, is to syringe both surfaces with a solution of whale-oil soap, using one pound of the soap to one gallon of water. Another remedy is kerosene mixed with an equal quantity of milk, a spoonful of the mixture being then stirred in a gallon of water for syringing. In a few hours wash off either of these applications by syringing with clear water. Caution is recommended in the use of carbolic acid on plants, as it will destroy them if used too freely. It is advised to mix a few drops in soap suds made from soft soap, and try its strength on weeds.

DECORATIVE TREE PLANTING.—The Commissioners of the Woods and Forests, of England, are trying to plant a large extent of crown lands in the Isle of Man with forest and ornamental trees. The experiment, which is watched with interest not only by those who follow sylviculture as an art but by many who regard with apprehension the gradual denudation of forest and woodlands, leads *Land* to comment on the growth of a taste for planting; for transforming into artistic plots grounds which are ill-favored and uninviting; for digging lakes and forming cascades, resulting in magnificent combinations of sylvan charms.—*American Garden.*

A GERMAN INSECTICIDE.—The *Repertoire de Pharmacie* quotes, upon the authority of Dr. Nessler, a receipt for an insecticide which is said to have a great reputation among German horticulturists. It consists of soft soap, 4 parts; extract of tobacco, 6 parts; amylic alcohol, 5 parts; methylic alcohol, 20 parts; water to make 1,000 parts. The extract of tobacco is made by boiling together equal parts of roll tobacco and water for half an hour, adding water for what is evaporated. The soft soap is first dissolved in the water with the aid of a gentle heat, and the other ingredients are then added. The mixture requires to be well stirred before used, and is applied by means of a brush or a garden syringe fitted with a small rose.—*Scientific American.*

PIPER'S SEEDLING STRAWBERRY.—This is a remarkable berry. It has the greatest vitality of any strawberry in cultivation; the plants stand our coldest winters without protection, and stand our severe hot summers, and continue to make plants when others die on the same ground along side of it. The fruit is firm, and can be shipped a long distance. The fruit has been ready to pick on Friday, and it set in raining, and it rained for two or three days, so as to prevent the fruit from being gathered until Monday, when it has been gathered and hauled fourteen miles, and then it sold readily at 15 cents per box, by the crate, when others were selling at from 10 cents to 12½ cents, at retail. It is unsurpassed for canning and preserving. It is believed the berry can be shipped 500 miles, and arrive in good condition. The fruit is large, some berries measuring 2⅝ inches in diameter. The fruit is fine, sweet, and of delicious flavor. Taking all things into consideration, we think the Piper cannot be excelled.—S. W., *in Fruit Recorder.*

ROSES ON ARBOR-VITÆS.—One of the prettiest, certainly one of the most striking, combinations seen for some time we (*Irish Farmer's Gazette*) saw this last week at a villa residence near town. Immediately in front of the house and just outside the carriage ring stand two fine old specimens (companion plants) of the American Arbor-vitæ (*Thuja occidentalis*). Near one of the two at some time a plant of the old cluster Rose, Rosa multiflora, was growing, which, inclining to fraternise with its American cousin, extended a feeler shoot, which was favorably welcomed by the friendly conifer, the result being a picture of shrub and floral beauty in combination. When at this season the somewhat sombre, irregular, and picturesquely broken surface of the Thuja is garlanded with the snowy Rose wreaths which burst out here and there, and in striking contrast of color, hang from or drape the dark spray of the friendly tree, it forms one of the prettiest and most striking combinations imaginable—a combination, too, like many another happy one, the result of accident rather than design.

PRINTED AT THE STEAM PRESS ESTABLISHMENT OF COPP, CLARK & CO. COLBORNE STREET, TORONTO.