



FIG. 2099. AVENUE NICOLAS II, PARIS, FRANCE.

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HORTICULTURE IN PARIS.—I.

THAT the French are a flower-loving people, one realizes in a very short time spent amongst them. The large numbers of people seen hawking flowers in the streets; the large number of flower shops, which are almost as numerous as bread shops or dairy shops, would convince the most sceptical of that fact.

Reaching Paris late on a Saturday night in the end of March, in a short walk in the streets, flower sellers were met about every acre, and they were doing a brisk business. violets, primroses (wild), daffodils, and lilies of the valley, lilacs and roses, with some cytisuses, or kindred plants with yellow flowers, formed their principal stock in trade. Needless to say that at that date the lilacs and roses were forced. The French people take a special pleasure in lilacs, of which they possess a very large number of varieties, many of them of great beauty. In the gardens, on the outskirts of the city, we see them in large numbers, and we find the spikes of cut flowers throughout the entire season. They not only force them, but also retard them. As late as

October large quantities of them were still in evidence.

The Paris houses are always well supplied with flowers. They are daily renewed, and one sees the withered plants that have served their purpose, thrown out into the streets with the other rubbish, for the scavengers to carry off during the night or early morning.

The Paris dwelling houses open into court-yards; these court-yards, when not paved, are usually planted with a nice assortment of the better class shrubs—laurels, rhododendrons, azalea mollis, magnolia, &c., or, if paved, the plants are set around in large tubs or boxes, and may consist of palms, Araucarias, Aucubas, large ferns, and other plants of that character that may be frequently changed.

One of the climbers that one often sees is the Wistaria. In the early summer it bears hundreds of long, graceful, pendant clusters of blue, or white, flowers. Another beautiful climber is the Bignonia radicans, and almost everywhere the common and large-leaved ivies are seen, less frequent are the clematises, the ampelopses, and the

various honeysuckles. Amongst the large plants that are set out in front of the dwellings and restaurants in the streets are several kinds of box, privets, *Euonymus*, *Laurustinus*, standard roses, laurel, etc.

PARIS PARKS.

The parks in Paris generally contain large and fine collections of plants of all kinds, forest trees deciduous and evergreen, shrubby-herbaceous plants, bedding plants, annuals, and bulbous plants. The apparent effort seems to be to keep up a continuous display of flowers from earliest spring to latest fall, and from week to week one observes the flower beds completely transformed. The early flowering bulbs with which the plots are filled in the fall, are succeeded by pansies, hepaticas, and other low-growing early flowering perennials; these, are in turn, succeeded by annuals in full bloom, or some of the bedding out plants. This sort of flower garden was seen at its best within the exhibition grounds, in the concours made by the large seed-houses and floral establishments. These concours took place every fortnight, or three weeks, and at each successive one, every bed was completely changed. Bulbs of various kinds—hyacinths, tulips, scillas, &c., in full flower, were set into the plots, pots and all, and at the next concours were replaced by *calceolarias*, or *cinerarias*, or *geraniums*; on the next occasion these were replaced by bulbous *begonias*, or *cannas*, or *chrysanthemums*, and one sort of annuals was succeeded by another, or by mixtures of annuals or herbaceous plants. Our native perennial asters were very largely used and made a very beautiful display. In the same way, one bed of shrubs succeeded another. Lilacs in pots and *spireas* of several families were followed by *rhododendrons*, *Azalea mollis*, *Ceanothus*, *Althea frutex*, or *kalmias*, and so the

transformation went on. Many of our own common native shrubs, dwarf chokecherries, *Pyrus arbutifolia*, *Spirea salicifolia*, *viburnums*, &c., taking their place with others in the general transformations. Canadian ferns, too, were largely used in permanent beds and clumps.

Amongst the annuals used in these renewals, were the everlasting *acrocliniums*, *rhodanthe*, *helichrysum*, and the feathered *celosia*. The *campanulas*, chiefly the dwarf species and varieties, *Carpathica*, *Sibirica* and *Venus looking-glass*. Chinese asters were very largely used, so were the dwarf blue *ageratums*, *aubricias*, *brachycomes*, *browallias*, *centaureas*, *forget-me-nots*, *asperulas*, *larkspurs* and *whitlávias*. Amongst the most interesting yellows were the *Gamolepis*, *Tagetes*, *Linari* *multipunctata*, pansies, *antirrhinum*, dwarf *erysimums*, dwarf *zinnia*, *Tagetes signata pumila*, French and African *marigolds*, *Matricaria*, golden ball. Small white flowers that lent themselves readily to that kind of work were the sweet *alyssum*, *Arabis alpina*, *candytufts*; pansies, the large flowered daisies, dwarf asters, *godetias*, *phloxes*, the *Gypsophila muralis*, *Saponarias*, *schyranthus statice*, *Humea elegans*, with many of the annual grasses, furnished light feathery effects, while *Virginian stock*, *Nemesia floribunda*, *silene*, varieties of *petunia* and of dwarf compact crimson *phlox drummondi* made dense rosy crimson beds. *Amaranthus bicolor*, *tricolor*, and *Melancholicus ruber*, supplied beautiful foliage.

The *godetias*, especially the varieties of *Whitneyi*, made beds that at a short distance were mistaken for large flowered *geraniums*. Some of the most beautiful masses of blue flowers were made of the single blue aster, *Callistephus hortensis* the original of all the immense number of varieties of the Chinese aster, and for fall



FIG. 2010. VIEW IN THE TROCADERO GARDENS (RUSSIA-IN-ASIA), RUSSIAN PAVILION AND DUTCH INDIAN PAVILION TO THE LEFT.

flowers the improved varieties of many of our native wild asters were unrivalled; the effects were always most pleasing.

The campanulas, especially the canterbury bells, were very largely used, and with good effect. A collection of forty varieties, that came all the way from Russia, was very much admired. The bright varieties of *Tropeolum lobbi* made glowing masses that rivalled the large-flowered tuberous begonias. Plants of the sunflower family helianthus, helenium, helianthella, rudbeckia, doronicum, echinacea, coreopsis gaillardias, were in abundance at all the concours. The *Aquilegia cœrulea* hybrids, and glandulosa, were very beautiful. The aster (perennial), *alpinus speciosus*, was one of the most admired plants during the early summer months, flowers of a

lovely violet and very large and numerous.

Roses in masses were planted by the thousand, standards, half-standards and dwarfs, and as they were chiefly hybrid-perpetuals, Teas and Chinas, they made a splendid display throughout the season, and were not disturbed. These were furnished by the large floral establishments and each mass bore a neatly printed advertisement of the grower. In the same way large clumps of conifers were supplied, each plant carefully named, and as the variety was very large, and the specimens well grown, the whole formed a beautiful object lesson.

Large plots of climbers in the same way, clumps of evergreen shrubs (not conifers) deciduous shrubs, &c. Clumps of purely American plants rhododendrons, azaleas

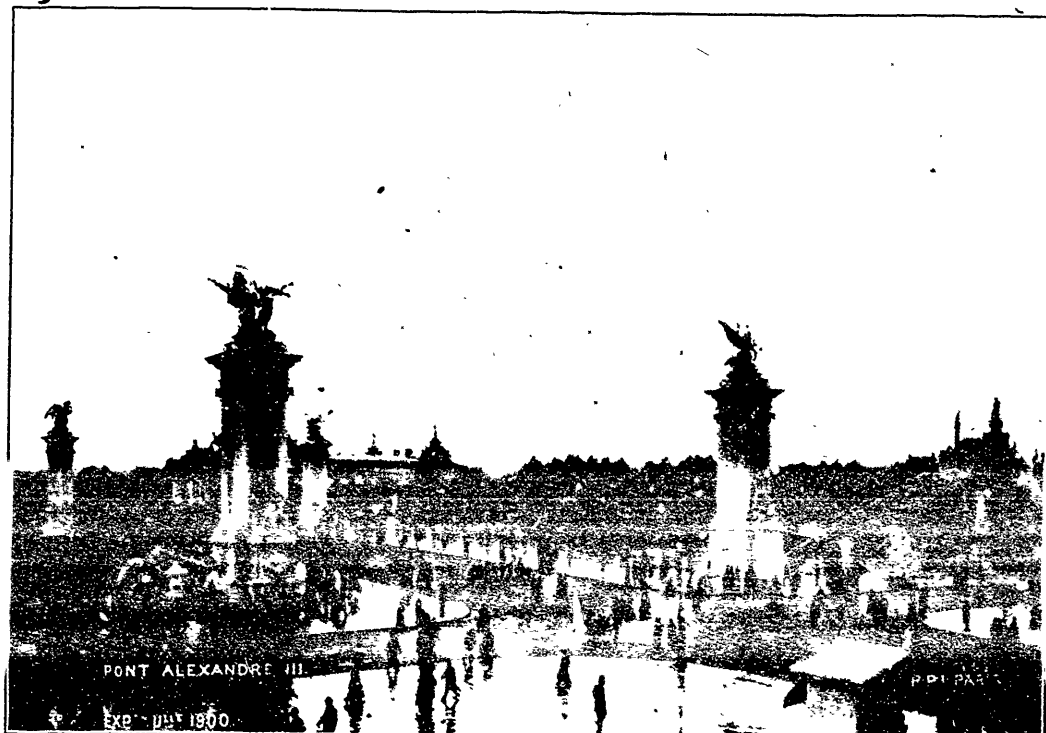


FIG. 2011. ALEXANDER III BRIDGE, PARIS.

andromeda, gaultheria, kalmia, sedums, &c.

PARIS SQUARES AND PUBLIC GARDENS.

These squares in Paris generally contain large and fine collections of all kinds of trees, shrubs, and herbaceous plants, that will endure the climate, and it is astonishing what a large number of varieties are found in them. In the Jardin des Plantes is found the famous old Cedar of Lebanon that was brought to France in 1636 by Bernard de Jussieu, and also the first Robinia pseud-acacia that was brought to France from America in 1600. The former a grand old tree in perfect health and preservation. Of the latter only a sucker remains, but an imitation of its trunk is made in plaster.

In the Jardin des Plantes, and buildings adjoining, the School of Botany meets to hear lectures and to receive practical

demonstration in botany and kindred subjects.

PARIS STREETS, ETC.

The streets and highways in Paris and throughout France are generally planted with forest or fruit trees. We had the pleasure, at the Pomological Congress, of listening to a very interesting debate on the subject of "forest trees versus fruit trees for country roads." The fruit trees carried the day.

In Paris the tree most frequently seen in the streets is the horsechestnut, the common, the double, and the crimson. In some districts the catalpa is pretty numerous, and occasionally the ailanthus is found, and the Judas tree. A few elms and maples, too, are seen in places, but next to the horse chestnut in numbers comes the American plane tree with a few of the

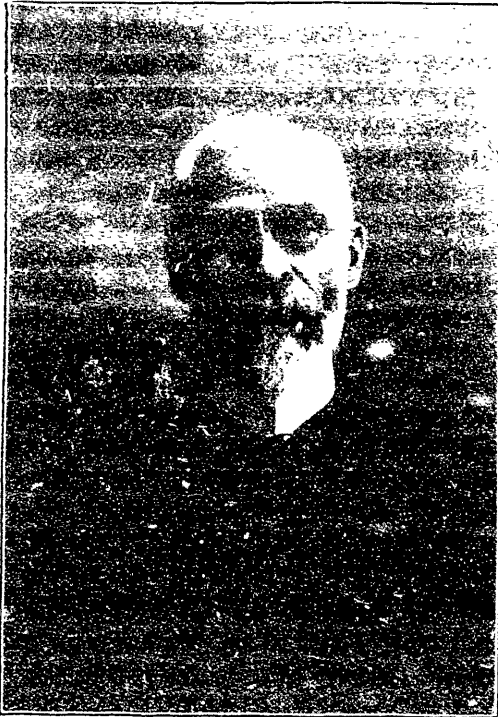


FIG. 2012. MR. ROBT. HAMILTON,
Superintendent of Horticulture for Canada.

Eastern plane. This is a very interesting tree with its innumerable little seed balls tangling by a slender thread. Along the River Seine and the canals the black poplar is everywhere met with. Rare specimens of linden and locust were seen and also the *Salisburia* or Maiden-hair tree.

In private grounds that may be seen from the streets, the variety of trees is, of course, very much greater than in the streets, inasmuch as there is no restriction as to size, character, &c., so that one sees weeping trees of all kinds—maples, willows, elms, birches, cherries, ashes, beeches, mulberries, locusts, lindens; cut-leaved trees of as many families—crimson and purple leaved trees, variegated leaved trees; conifers; cedars of Lebanon, hemlocks, balsams, spruces, *Wellingtonia gigantea*, &c. Trees with round heads, fastigate

trees that seem to wish to hold communion with as few as possible of their fellows and aspire heavenward, Lombardy poplars and Bolleana poplars, pyramidal birch, monumental elm; small flowering trees like the Golden Chain (*Cytisus*), the Japan lilac, the Crimson Double Thorn, magnolias, mulberries, and double-flowering apples. Of flowering shrubs the variety is practically endless. Rhododendrons are seen ten feet high and fifteen feet diameter, a solid bouquet and *Kalmias* almost as large; *euonymus*, *hibiscus*, *hydrangeas*, silver bells (*halesia*), *azaleas*, *ceanothus*, *Azalea mollis*, &c., to say nothing of the *Weigelias*, *Philadelphus*, *honeysuckles*, *spiraeas* and *lilacs* that we know so well here.

HORTICULTURAL EXHIBITS.

One feature of the Horticultural Concours that struck us as somewhat strange was the fact that all the exhibitors were professionals. There were no exhibits from private gentlemen's grounds, nor did there seem to be anything from market gardeners. Large establishments, syndicates, and horticultural societies were the only concurrents or competitors.

The Horticultural Society of France is said to be very rich. The building where its members meet for the transaction of business—a large magnificent affair, said to have cost a half million francs, and which yields an annual revenue of twenty thousand francs—is the property of the Association. The two horticultural pavilions of the late exhibition, two magnificent structures, are also said to belong to this association.

Yet, when all is said of the grandeur of the late exhibition, it must be admitted that, when we consider the wealth of France in everything horticultural, together with its population and wealth, our Ottawa, Toronto, or Montreal exhibitions, are comparatively much better.

Grenville, Que. ROBERT HAMILTON.

QUEBEC FRUIT GROWERS.

THE eighth annual meeting of the Pomological and Fruit Growers' Society of the Province of Quebec was held on the 31st of January and 1st of February at Muir Hall, Hunting-ton, Que. Morning, afternoon and evening meetings were held. The meetings were well attended and a great deal of interest shown, and different subjects were well discussed, many in the audience joining in the discussions.

The meetings was ably conducted by the President, Dr. H. W. Woods, St. Johns, Que. The society was particularly favored by having such a large number of professors to attend their meeting.

Mr. J. M. Fisk, Abbotsford, gave an address on Horticultural Exhibitions and advised the adoption of judging by points. In the discussion that followed single judges were thought advisable, and the system of judging by points was thought to work well on single plates but at times lead to confusion in collections.

Dr. Saunders, director Experimental Farms, Ottawa, gave a very interesting address showing the important position the fruits of Canada have taken in all the large exhibitions of the world from the Centennial at Philadelphia in 1876 to the Paris Exposition of last year.

Dr. Fletcher, Entomologist Central Experimental Farms, in a well chosen address, showed the value of the honey bee to the fruit growers as a pollenizer, and explained why the bee did not injure fruit, and that there had never been a case known where the bee

had broken the skin of the tenderest fruit. Mr. Selwin, of Ottawa, also gave a paper of great value to the bee-keeper. Mr. Hamilton, of Grenville, and Mr. Shepherd, of Como, closed the afternoon meeting of the second day with well chosen remarks on cold storage and the possibilities of the fruit grower as an exporter under more favorable conditions.

The feature of the evening was an illustrated address by Prof. John Craig, Cornell University, Ithaca, N. Y., who showed some excellent lime light views of some of the most profitable orchards in western New York and the views of several packing and evaporating plants, closing with a photo of the Directors of the Quebec Association taken at the time of the first meeting of the board.

Prof. Waugh, Horticulturist, Burlington, Vermont, spoke of the selection of varieties and drew attention to the Fameuse type as being of special value as grown in Quebec.

Mr. R. B. Whyte, of Ottawa, in addressing the meeting showed the advantages to be derived from Local Horticultural Societies being connected with the Provincial Society and cited the benefits gained by affiliated societies in Ontario.

The subject received great attention and was discussed at some length, and it is probable that in the near future steps will be taken to form affiliated societies on the same general plan as in Ontario.

Your representatives were very cordially received and entertained while at the meeting. HAROLD JONES, Maitland.

THE RICE HARVEST IN ONTARIO.

RICE LAKE is one of the larger lakes of the Trent Valley, being about twenty-two miles long and from one to four miles wide. It is between the Counties of Northumberland on the south and Peterboro on the north. A number of small streams empty into it, also some larger, as the Otonabee, Indian and Ouse.

The lake itself looks beautiful from almost any point, especially from Hiawatha, Keene, Foley's and Birdsall's on the north, and from Benally, Gore's Landing, Harwood and McCracken's on the south shore.

There are a number of islands in the lake, some small and others large, Whites having 300 acres of good land.

Then there are bays formed by points of land that jut into the lake and are very beautiful. Perhaps the most interesting point of land is the one known as Desangs or Roaches. It is the one that in the long, long ago the Indians chose as a place for worship, building the wonderful serpent mound that a few years ago was recognized by Mr. David Boyle, of the Canadiar Institute.

For years and years the point had been a favorite picnic ground with the inhabitants of the north and south shore; the same beauty of location attracted them that had the aborigines before the time when Champlain and his party camped there when they were exploring the Trent waters. Who will gainsay the thought that localities have

their own spirit, attracting or repelling humanity.

The object of this paper is not to enter into all the beauties of and around Rice Lake, and there are many—for truly the country north of the lake may justly be called the Midlothians of Ontario—hill and valley, no matter where the eye travels. From some of the hills views extending thirty miles are at the disposal of the gazer; from one point on a clear day seven town-



FIG. 2013. GATHERING RICE.

ships can be seen. But this is not the lake, it is lake, stream and land.

Rice Lake is noted for its sport, consisting of fishing and shooting. The fish that are trolled and angled for are bass, black and yellow; the game hunted are snipe, plover and ducks. Of the latter there are the summer and fall ducks, each good in their season.

The food of the fish is supplied largely by the beds of wild rice, or known as black

rice, and it is on these large fields of rice that the ducks feed during the Summer and Fall. These beds or fields of rice, some a few acres, and others of two or three hundred acres in extent, not only supply fish and fowl with part of their food, but also men, women and children with part of theirs.

Many consider the native rice to be superior to the imported in point of flavor.

growing in water from two or three feet to six or eight in depth, if the season is a dry one, the crop is sure to be light, but if showery, then the yield is heavy. Those not acquainted with this fact laugh at it; still, laugh as one may, the fact remains—little rain, little rice; just enough rain, a good yield.

The manner of harvesting is peculiar.



FIG. 2014. THE ENCAMPMENT ON RICE LAKE, SUGAR ISLAND.

The harvesting of the rice crop is entirely in the hands of the Indians, descendants of the ancient Ojibway tribe, there being a reservation at Alderville and another at Hiawatha.

There are two leading varieties of rice, an early and late, the former maturing in August, the other late in September.

Strange to say that the rice crop, though

Being in the water, neither reaper, scythe nor sickle are used, but a canoe and two occupants, generally an Indian and a squaw, the one paddling the canoe through the dense mass of straw, the other pulling the straw over so that the heads of rice are fairly over the canoe, then with a stick the grain is beaten out or off into the bottom of the canoe; this is done from one side and.

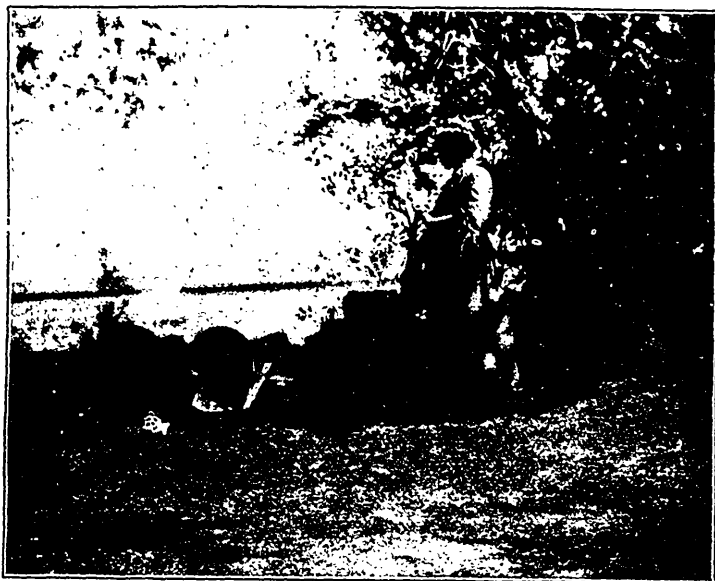


FIG. 2015. SCORCHING THE GREEN RICE SO AS TO GET THE HULLS OUT.

then the other, then it is push along John for more straw with rice on it.

Of course a good deal spills over the side of the canoe ; it forms the seeding for the next year, also is the source of food for the Fall water fowl in the shallower water.

When the canoe is filled by this primitive procedure it is taken to the camp where it is then treated, or manufactured, into an edible shape or state. The first thing done now is to have a large kettle, like a large soap kettle, with a slow fire under it. The rice is put into the heated kettle in small quantities, being continually stirred so as to parch the outer covering but not burn the grain. This requires experience and an adeptness only obtained by patient practice.

The next stage of manufacture is to use another kettle somewhat larger, into which the parched product is placed. Now the brisk time has arrived, for a lusty man or youth steps in and to a humming melody he waltzes to right, then to left, all the time having a firm hold of a limb of a tree, or a pole supported on two forked sticks driven firmly into the ground. This frees the parched and loosened hull from the grain. The last stage of manufacture is the winnowing of the

grain from the chaff and is accomplished much in the same way as Araunah did on his threshing floor in the period of the undivided kingdom of Israel—i. e., the chaff and grain are thrown into the



FIG. 2016. CLEANING THE RICE FROM CHAFF BY TOSSING IN THE WIND.

air ; away goes the chaff and down comes the rice.

Not all the gathered rice is manufactured. A large amount is sold as green rice and is shipped to other points to stock small lakes with rice for the water-fowl, and some is exported for the same purpose.

Usually six to seven weeks are occupied in the gathering of the crop. 'Tis said that away from its native place that the wild rice is a shy grower, many finding it difficult to get it accustomed to its new surroundings. After the fall gales in those places in the lake that in summer looked like beautiful meadows, not a speck of rice straw is to be seen, it having all gone to the bottom.

The story is told (of course it was long

ago, all good stories are of the long ago). of a man who was going up Rice Lake in one of the barges, who, seeing the beds or fields of rice, asked what it was. On being told it was rice growing in water he supposed that they were guying him and insisted on the barge going into the edge of the field so he might show them he was not as green as the stuff, for he would walk on that elegant meadow as fast as the old tub could go. He made the essay and was right glad to have a hand to help him on board. While still dripping and the water running down his face he was heard to say, "Who'd have thought it was so deceitful."

Keene.

DR. HARRISON.

SAN JOSE SCALE. The Committee, sent by our Association, interviewed the Hon. John Dryden on the 2nd of February. There were present Messrs. Murray Pettit, Winona, Chairman ; W. M. Orr, Fruitland, Major Hiscott, ex-M. P. P., Niagara ; Dr. Jessop, M. P. P., St. Catharines, and Mr. George E. Fisher, Freeman, the Government inspector.

The following recommendations were submitted by the deputation :

(1) That a system of inspection be carried on in all suspected districts, with a limited number of suitable assistants.

(2) That every grower in suspected districts be required to inspect his own trees during the months of November and December in each year, and to report to the inspector, not later than the 1st day of January following, on suitable blank forms to be furnished, that the work has been carefully performed, together with a statement of the condition of the orchard at the time of inspection.

(3) That as the work of treatment is still in an experimental stage the Government should make suitable material, both whale

oil soap and crude petroleum, available to the people on the same terms as supplied to growers last year.

(4) That in isolated sections where the scale is found to a very limited extent the treatment of the trees be carried on by and at the expense of the Government under the direction of the inspector.

(5) That with regard to nursery stock, the most careful measures be continued to properly protect the purchaser from the infestation from this source, and to this end all fumigation be done under the supervision of the Government, and official certificates be issued to accompany each shipment.

Hon. John Dryden, in reply, said he was anxious to do all he could for the fruit-growers. He suggested that in order to secure the enforcement of precautionary measures the association appoint a committee of three to co-operate with the department, particularly in the placing of suitable spraying material within the reach of the public. It is probable that some action will be taken at the Legislature this session to prevent the further spread of the scale.

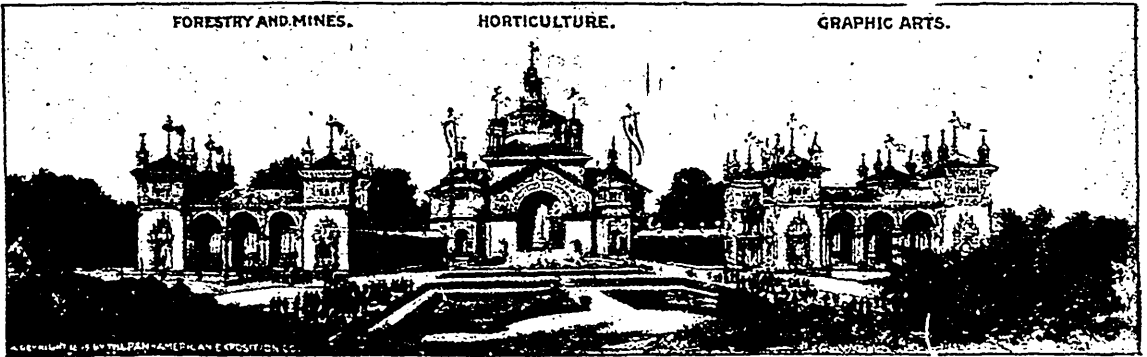


FIG. 2017. HORTICULTURAL BUILDING.

OUR FRUIT AT THE PAN-AMERICAN.

OUR readers will be pleased to learn that the request of our Association for a good exhibit of our fruits to be shown at Buffalo this summer has been granted. Mr. C. C. James, Deputy Minister of Agriculture, Toronto, has been constituted honorary Commissioner for Ontario, and he has already in cold storage in Buffalo 180 bushel cases of choice Ontario apples, in readiness for the opening months of the exhibition. He has also secured a liberal amount of space, and the officers and members of our Association, desiring to furnish fruit for this exhibit, will have every opportunity during the summer. In this connection our readers will be interested in a view of the Horticultural Building, which is truly a fine work of architecture.

The Pan American Magazine speaks of this building as follows :

Horticultural exhibits at Buffalo will have a beautiful setting in and about an exceedingly handsome building 220 feet square. The height of the building is 236 feet to the top of the lantern, and the general proportions are of commanding grandeur. Situated in a position of great prominence on the western side of the ground, the approach from the east is through the esplanade, past

the basins of aquatic plants, the fountains and the great urns containing beautiful tropical foliage effects ; up the curved incline which is bordered by many odd varieties of fruiting trees and shrubs, to the magnificent doorway which is the subject of the accompanying illustration. Probably no horticultural exhibit has ever had such elegant and appropriate surroundings and no former display has been so well worthy of it.

The Horticultural Building is connected by semi-circular conservatories with the Graphic Arts Building to the north and the Mining building to the south. These conservatories are themselves very beautiful architectural features of the Exposition and the fine floral displays in them will enhance their attractions to visitors. They connect the three buildings in this group but are distinct and separate buildings, having their own individual style and their exhibits of entirely different character. The court upon which the three buildings of the group face contains one of the superb Esplanade fountains.

Fruits of all kinds will be placed on exhibition during the summer. Much of the fruit will be preserved in cold storage, though the exhibit will change as the sea-



FIG. 2018. THE ENTRANCE.

son advances and the different varieties ripen. A number of states have made arrangements to provide collective exhibits

that will properly represent the horticultural products of their particular section. California is arranging for a special exhibit of the wonderfully diversified fruit productions of that state. Other states are taking the matter up with the prospect of making the horticultural exhibit the most complete ever attempted. The same care that characterizes other sections of the Exposition will be given the Horticultural division with the view of making it representative as to character rather than exhaustive in detail.

Large as the Horticultural Building is, it will not contain all the horticultural exhibits. A plot of ground has been provided extending across the west front of the building on the opposite side of the grand canal, and extending south as far as the Elmwood gate. This plot has been under course of preparation for many months, and will present a restful attraction in pastoral contrast to the hum of busy, energetic action which will be so characteristic of portions of the Exposition.

POINTS IN PRUNING.

KNIFE or saw should never be used on a fruit or ornamental tree unless there is positively good reason for so doing.

Train all trees while young with a central leader or main shoot, and never allow two main branches to grow in such a way as to have the weight of the tree come upon a fork of the main trunk.

When two branches cross so as to be injured by rubbing together, the weaker of the two should be cut out.

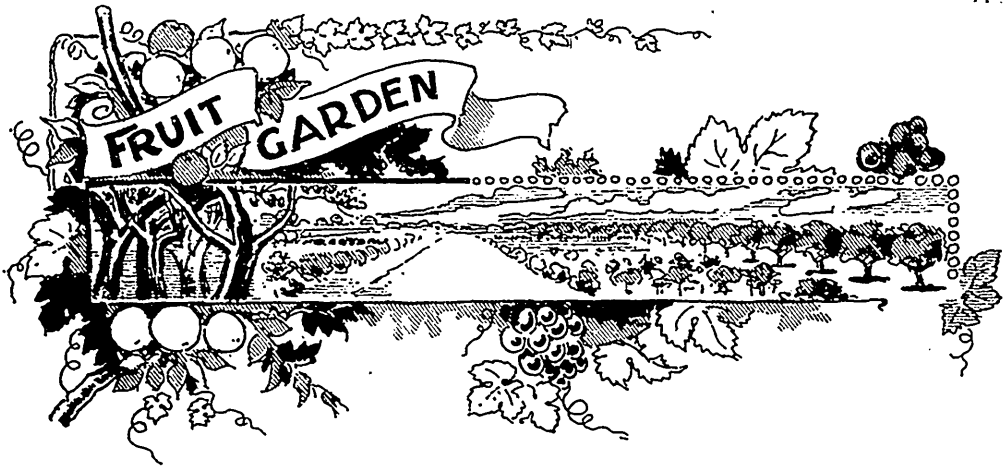
If large branches are to be removed, make the cut on the middle of the enlarged part where it joins the main branch or trunk and not quite in line with the face of the main branch or trunk.

Paint all wounds above $\frac{1}{2}$ inch in diameter with linseed oil paint, gas tar or grafting wax.

Never cut away the main branches of a tree if it can be avoided, but thin out the head, when it becomes crowded, from the outside. This can be quickly done with the pruning hook on a long pole, and little or no injury will result, while if the large branches are cut from the trunk the tree is weakened and soon dies or is broken down.

Cut off dead branches as soon as discovered and cover the wound with paint to prevent further decay.

In training young trees, start the branches low, the trees will grow better, the thinning and gathering of the fruit will be more easily done and the cultivation can be as well and cheaply done with the modern Acme or spring tooth harrow and weeder as if the head was higher, while the trunk of the tree and the ground under it will be better than if more exposed.—*Prof. S. T. Maynard.*



HILLCREST ORCHARDS, NOVA SCOTIA.

SIR,—I have reached Pictou (February 3rd), on my way to Prince Edward Island (where there is a series of meetings next month), after attending the U. S. Fruit Growers' Association last week. The Atlantic Transportation problem, and the proposed Agricultural College were two things which were given great prominence at the meetings.

While at Wolfville I had the opportunity of visiting the fruit farm of Mr. Ralph S. Eaton, which I am sure you have read about. There is no orchard in Canada that I have seen, where, in my opinion, the prospects were so bright and the possibilities so great as in this finely kept orchard; the trees have made wonderful growth in the time they have been planted, and are exceptionally symmetrical. I was informed that this orchard land, which thirteen years ago was valued at \$10.00 per acre, is now considered to be worth \$1000.00 per acre.

Thinking that an account of this orchard might prove acceptable to you for the Horticulturist, I obtained from Mr. Eaton some photos showing some of his trees and the fruit grown on them. I also enclose extracts from newspapers giving some account of the history of this orchard and the way it is laid out.

W. T. MACOUN, Ottawa.

The orchards of Mr. R. S. Eaton of Kentville, N. S. are of interest to fruit growers for several reasons, viz:—(1) There is nothing finer in the whole of Canada: (2) artificial fertilizers, chemicals, clover and tillage have depended upon solely, no stable manure: (3) no attempt is made to crop the orchard: (4) Mr. Eaton has succeeded in making his trees pay their way at a very early age: (5) Mr. Eaton has adopted new methods of tillage: (6) an attempt has

been made to arrange the orchard upon a scientific basis with a view to economy.

Mr. Eaton's plan of orchard is to plant standard apple trees 33 feet or two yards apart, in rows 33 feet apart. In the centre of each square, so formed, another permanent, or standard, apple tree is placed. This brings the rows 46½ feet apart. Again a plum, dwarf pear, quince or other small growing tree is planted in every space bringing the tree 8½ feet apart in the rows, the rows remaining a rod apart.

S	P	T	P	S	P	T	P	S	P	T	P	S
T	P	S	P	T	P	S	P	T	P	S	P	T
S	P	T	P	S	P	T	P	S	P	T	P	S
T	P	S	P	T	P	S	P	T	P	S	P	T
S	P	T	P	S	P	T	P	S	P	T	P	S

In the above diagram of orchard "S" stands for standard apples as Gravenstein, Ribston, Kings or Baldwin, "T" stands for temporary apples of young fruiting varieties as Wealthy, Wagener or Ben Davis; free growing cherries as Governor Wood, Windsor, &c. or free growing varieties of peaches. In the space marked "p" are plums, dwarf pears, quinces, apricots or small growing and non-rotting cherries as Early Richmond,

English Morello, &c. This system gives 320 trees to the acre.

Every 20 rods both east and west and north and south an open space is left for a roadway, dividing the orchard into blocks of $2\frac{1}{2}$ acres each. Instead of planting a standard in every square, as mentioned in the beginning of this description, a plum or peach

Two thousand of Mr. Eaton's cherries were dug up from the woods, and later grafted with improved kinds.

Mammoth clover is sown about the middle of July and there is no tillage until about the middle of next May, when the clover is plowed under. In plowing by trees a long chain is used, with adjusted



FIG. 2019. Average sized Gravenstein apple tree at Hillcrest, eleven years old, planted among stumps in new land. Product for year 1900, three barrels.

may be placed in every third square and the row thus formed be filled in with plums, peaches or other short lived trees. Every sixth row on this plan is composed wholly of temporary trees, which can be cut down in 15 years, leaving a roadway for teaming and spraying. As the trees grow and begin to crowd each other they are to be cut out in the reverse order of their planting, till, when the orchard is fully grown, only "S" will be left.

coupling, and the soil is always thrown toward the trees. From the middle of May till the middle of July the harrow is used once a week, which, with the one plowing, is all the cultivation the orchard gets. In a 60 acre orchard it is necessary to economize time. With this in view Mr. Eaton has widened an ordinary six foot disk harrow to eight feet by adding four disks. The rows being $16\frac{1}{2}$ feet apart, this harrow

only goes one turn for each row of trees, and one team among these rows one quarter of a mile long will do 20 acres in 10 hours. Each half of the disk harrow is at an angle so it draws the earth from the trees at one end, and from a line midway between the rows at the other, thus forming a dead hollow. To obviate this the harrow is widened

Pruning is done in June and July, in order to induce fruit bud formation and to avoid the waste of wood growth which belongs to winter pruning. The stems of permanent apple trees are trimmed five and a half to six feet high, but the temporary trees of all species are trained low and headed in, thus gaining in four years as much



FIG. 2020. Burbank plum tree at Hillcrest, six years from the bud, fifth summer planted; product for 1900, two bushels.

out to 12 feet, and a blank of four feet left in the centre. This secures a level surface and enables the horses to keep entirely clear of the trees. For pulverizing the soil a spring tooth harrow has been widened to eight feet, in the same way as the disk harrow. This plan appears to work admirably, for there is scarcely a weed to be seen in the orchard, and the ground is mellow as an ash heap.

fruiting top as is ordinary obtained in double that time. Young Burbank plums and Ben Davis apple trees, not above seven feet high, in this orchard are bearing two bushels of fruit each. The temporary trees are never allowed to interfere with the growth of the permanent ones, but after they are large enough to bear a barrel each they are kept headed in.

In spraying, as in cultivation, it is necess-

ary to operate on a large scale, and Mr. Eaton has invented apparatus suited to his circumstances. One pump is made to operate two sets of hose, each with double nozzle thus throwing four streams at once. Extension piece of $\frac{3}{8}$ iron pipe are used and a small saucer shaped piece of galvanized iron soldered around them a few inches below the nozzles prevents any drip. Mr. Eaton this year left one row throughout his orchard unsprayed, as an experiment, and is more than ever convinced of the value of spraying. He usually applies the Bordeaux mixture four times a year and believes it of value as a fungicide and also a protection against black knot in plum trees. It might be noted that the orchard is free from black knot.

As to varieties Hillcrest orchards have in apples:—The Gravenstein, Ribston, Blenheim, Wealthy, Baldwin, Wagener, Ben Davis, Golden Russet, Fallawater and Nonpariel. In plums a specialty is made of the Japanese varieties of which there are 1100 Burbanks, 400 Abundance, 300 Red Junes and 200 Wickson giving a succession of fruit from August till well into October. One thousand other plums are divided among the Lombard, German Prune, Reine Claude, Quackenbos, Niagara, Bradshaw, Monarch, Black Diamond and Grand Duke. Plums have been shipped to London with results that justify the expectation of finding a market for surplus products. Ten varieties of peaches have been planted, seven

of which, the Alexander, Hyneu's Surprise, Elberta, Crosby, Hill's Chili, Mountain Rose and Early Rivers, ripening in seven successive weeks, have proved sufficiently hardy. This year Mr. Eaton had 400 boxes of Governor Wood and Early Richmond cherries, and expects to have 1000 of the English Morello. The various kinds of cherries ripen from July to September. In pears there are Bartlets, Clapp's Favorite, Duchess, Louise Bonne, Flemish Beauty, Anjou and others. Three kinds of apricots are grown and also several hundred quince trees.

How rapidly the value of the land multiplies is seen from the fact that thirteen years ago the oldest part of this orchard was in forest, and six years ago much of it was in stump and worth about \$10 per acre. To-day it could not be bought for less than \$500 per acre.

NOTE BY EDITOR.—We are much interested in this account of Hillcrest orchard, and must certainly compliment Mr. Eaton on his wonderful enterprise, and also on the excellent assortment of fruits he has planted. Such a plantation, cultivated and fertilized in a proper manner, is certainly a valuable piece of property, but surely Prof. Macoun's wide of the mark in his figures. We have heard of fruit orchards in the Niagara district of Ontario, valued at \$1000 per acre, but always thought such valuation very misleading, and surely Hillcrest, with all its excellent points, is not worth any such value per acre. Possibly, in some seasons, when the crop is good all around an orchard might yield ten per cent income on one thousand dollars, but what of the years when the crop fails, or the market prices drop to such a point that all the income is eaten up in expenses? These conditions sometimes prevail with us in Ontario, and surely Nova Scotia fruit growers are not exempt from such seasons of discouragement.

STANDARD BASKETS.

FOR a long time the fruit business has been in an unsettled condition for want of uniform packages. Many shippers seem to think that by putting up their goods in smaller packages than their neighbors, and charging the same price, they would make more out of their fruit crop; a trick that succeeds for a time, but by and by

defeats its own end, for soon all baskets sell for the price of the smallest.

At the recent meeting of the Ontario Fruit Growers' Association, held in Brantford, the following gentlemen were appointed a committee on uniform packages: W. M. Orr, A. H. Pettit, L. Woolverton, D. J. McKinnon, C. W. VanDuzer, S. M. Culp, W.

J. Andrews, W. H. Bunting, Robt. Thompson, E. D. Smith, Murray Pettit, T. H. P. Carpenter, W. F. W. Fisher.

This committee met at Grimsby on Wednesday, the 20th of February, 1901, having invited representatives of the local societies at St. Catharines, Winona, Stoney Creek and Burlington to meet with them.

After careful consideration the following resolutions were carried unanimously,—

1. That, in the opinion of this committee, legislation should be enacted prescribing certain standard sizes of fruit baskets for use in the home markets and that all baskets of other sizes be branded indelibly with the minimum capacity in quarts.

2. That this meeting would recommend that the following be adopted as the standard sizes of baskets used in Canada,—

No. 1—Capacity, 15 or more imperial quarts.

No. 2—Capacity, 11 imperial quarts, depth $5\frac{3}{4}$ inches.

No. 3—Capacity, $6\frac{2}{3}$ imperial quarts, depth $4\frac{5}{8}$ inches.

No. 4—Capacity, $2\frac{2}{3}$ imperial quarts, depth 4 inches.

No. 5—Berry box, 1 Winchester quart.

No. 6—Berry box, 1 Winchester pint.

3. That the branding with the minimum capacity of baskets and berry boxes not of standard sizes be made compulsory in the case of imported as well as Canadian fruit.

4. That the Bill regulating the size of the apple barrel, to hold 96 imperial quarts, should be made effective from June 1, 1902.

FEEDING THE ORCHARD.

WHEN an orchard, of apple or pear trees, begins to bear fruit, the land should be enriched at least once in two years. It is a mistaken idea to suppose fruit will grow to full size unless the trees are well fed, and to grow fruit at the present time requires a constant watchfulness from the first opening of the spring to the closing of the autumn. In regions where the canker worm is found the trees should be protected by a strip of tarred paper as soon as a warm day in spring appears, unless this enemy is to be destroyed by spraying the trees after the worm hatches out. The tent caterpillar makes its appearance as soon as the leaves begin to grow, and should be attended to by spraying the trees or by using a light pole with a rag wound round the end of it, saturated with kerosene, and drawn through every nest

as soon as the worms are all hatched. Do not let them get large before employing some means of killing them. Following the tent caterpillar and canker worm is the codling moth, which, unless destroyed, will lay eggs on almost every apple and pear, producing the worms so destructive to the fruit.

The peach should not be overlooked by those who have land adapted to its growth. A light loamy soil with a northern exposure seems to do best for this fruit, and while the tree should be kept growing, it should not be forced so as to make an excessive growth. A tree that makes a large growth is so full of vigor that after the leaves drop in the autumn, if a few warm days come, the blossom buds start so much that the first cold weather kills them. — *American Agriculturist*.

CENTRAL EXPERIMENTAL FARM NOTES.—XIV.

THE past month has been one of unusual severity, and while the temperature has not been very low there have been many days when it was below zero. It has not been above freezing point since the 22nd of January, and since November there has been no thaw of any consequence. The snow has continued to increase this month, but there have been no heavy falls. The coldest day of the winter, up to February 20th was January 20th, when the temperature fell to 25.5 F. below zero. The lowest temperature in February, so far, was 11.8°F. below zero, on the 3rd.

It was my privilege recently to attend the annual meetings of the Nova Scotia and Prince Edward Island Fruit Growers' Associations. The meeting at Wolfville, N. S., was well attended and the discussions lively. Two subjects, which received special attention there, were the proposed Agricultural College for the Maritime Provinces and the transportation of fruit across the Atlantic. The fruit growers of Nova Scotia appear to have as much complaint regarding the manner in which their fruit reaches the other side as the fruit-growers of Ontario; although it was clearly proven that, as in Ontario, bad and dishonestly packed fruit had often been shipped. Spraying received considerable attention at this meeting. Many of the fruit growers in the Annapolis Valley now appear to be in doubt as to the value of spraying, as the results last year were not satisfactory. However, the value of spraying was clearly proven at this meeting and it is hoped it will be done more thoroughly than ever in the future. Last year was an unfavorable one for spraying and favorable for the growth of the apple scab fungus, which probably explains the failure to get good results.

Owing to stormy weather, the meeting at Charlottetown, P. E. I., was not as well attended as it would probably have been if the weather had been better. However, there was a good representative gathering of the most interested in fruit growing in the province.

The importance of preserving the forests, and their great value as a protection for fruit and farm crops, were thoroughly discussed and much useful information was given to the meeting.

The variety question is one in which the fruit growers of Prince Edward Island are most interested. Fruit growing is quite a new industry there and everyone is uncertain as to just what to plant. Judging by the exhibit of apples, in which were represented many of the best varieties, it was quite evident that most of the best apples grown in Ontario will succeed well on Prince Edward Island. The importance of planting only a few of the very best varieties was impressed upon the meeting. It was recommended that the varieties which were giving the best satisfaction in Ontario for export purposes should first be considered, and then out of these the sorts which were succeeding best on Prince Edward Island should be chosen. The advantages of planting the trees from 35 to 40 feet apart were also given much emphasis. *With some government aid the Fruit Growers' Association of Prince Edward Island should become one of the best in the Dominion, as there are many practical and intelligent men who take an interest in it.*

At present experiments are being carried on at the Central Experimental Farm in grafting. A large number of new varieties of apples, of which scions have been procured in different places, are being crown and root grafted. The small Siberian crab

(*Pyrus baccata*) is being quite largely used this winter as stock, on account of its extreme hardiness. Some of the grafting is done on the crown and some on the root, for comparison of results. Where root killing is liable to occur, varieties crown grafted on this stock will probably give the best results, as, when root grafted trees are planted, the the scion often throws out roots and in time the tree becomes on its own roots and is liable to suffer from root killing, if not a very hardy kind. The Paradise stock is also being used to obtain dwarf trees and ascertain how they will succeed at Ottawa. More care should be taken in choosing stock for apple trees in the colder parts of Canada, as if the stock is tender the tree may be root killed. Several kinds of stocks are being used for pears this winter, including European Mountain Ash, Hawthorn, and two wild Asiatic pears called *Pyrus betulaefolia* and *Pyrus szechuanensis*. Pears have not proved successful at Ottawa, as they have either been killed by blight or winter, and hence every effort is being made to overcome these diffi-

culties. The European or *Domestica* plums have not proved a success when grafted on American plum stock, as the former outgrows the latter. The best results are obtained by grafting the American on the American, and the European or *Domestica* on Domestic stock. The ordinary stocks used for cherries, such as Mahaleb and Mazzard, did not prove hardy enough at Ottawa, and hence the native Bird or Pin cherry, *Prunus Pennsylvanica*, was used for this purpose, with excellent results. The union is good, and being very hardy there is comparatively little danger from root killing.

The season will soon arrive when top grafting may be done. Judgment should be used in choosing the varieties to be grafted on the trees. Strong growing varieties should not be top grafted on varieties like Duchess or Wealthy, as the trees will become top heavy and probably break down. The stock should be as vigorous, or nearly so, as the top.

Central Experimental
Farm.

W. T. MACOUN,
Horticulturist.

A SHIPPING TOMATO.—A number of years ago I mentioned in these columns, with words of praise, the Honor Bright tomato, calling especial attention to its wonderful keeping qualities, which seemed to make it particularly suited to long-distance shipment; as, for instance, to England. I also liked it for a canning sort and for very late use. "American Gardening" now says:—"We have been able to discover more good points in it than our previous records showed. . . . Its yield of medium-sized perfect fruits compares well with any tomato grown. Its flavor is also acceptable to many people. . . . It takes a tremendous time to ripen, which largely accounts for its marvelous shipping qualities. There is no doubt but

that the variety can be grown in this country and successfully shipped to Europe, for if picked at the right stage it will ripen on the voyage." As Mr. W. W. Tracy (of the firm of D. M. Ferry & Co.) had pointed out, the coloration begins at the centre instead of at the skin, as is the rule with other varieties. Fruits that are yellow on the exterior may be cut, and it will be found that the flesh in the centre is beginning to become red. The variety can be readily distinguished by the yellowish, rather sickly appearing foliage. The weakness is only apparent, however, and I have had no reason to complain much about the Honor Bright showing blight or disease on the fruit.

CLASSIFICATION OF APPLES.

IN a recent bulletin, Prof. F. A. Waugh, horticulturist of the Vermont Experimental Station, discussing apples of the Fameuse type, says, regarding the classification of apples :

The second revision of Downing's "Fruits and Fruit Trees of America," which is the standard work on descriptive pomology for America, names 1,856 varieties of apples. This list was published in 1872, since which time there have undoubtedly been some hundreds of varieties introduced. In 1892 Bailey made a list of the apples offered in nurserymen's catalogues in the United States and Canada, and found that there were 878 varieties then named, propagated and held for sale.

Besides the varieties sold by the nurserymen at any given time, there are always many more not generally distributed but kept, coddled and prized in private collections, in small neighborhoods, or in out-of-the-way places. It seems a very moderate estimate, therefore, to say that there are 1,000 different kinds of apples in commercial circulation on this continent to-day, and there are over 2,000 varieties described in contemporary literature, and that there have been more than 3,000 separate sorts named and propagated in America within the period covered by our brief pomological history.

The impossibility of any man's knowing all the varieties of apples will be evident from the foregoing considerations. These thousands of varieties are separated from one another by infinitesimal shades of difference. Some of them can hardly be told apart by the most expert pomologists and after years of acquaintance. The cultivated apples are remarkably homogeneous. They are (with very minor exceptions for certain


crabs) derived from one original species. Compare this with the cherries,—two or three hundred varieties derived from two species,—or with the plums, where a thousand varieties are derived from ten or fifteen original species. In no class of fruits, unless it be possibly the strawberries, are varietal distinctions so thin and vexatious as in apples.

But while the characteristics of varieties of apples, taken all together, are so confusing, there are a few pronounced *types* which the horticulturist may fix in his mind, and around which cluster certain *groups* of varieties. The Fameuse presents such a type. There are several different apples of the Fameuse group, all differing measurably from Fameuse, but all conforming closely enough to the Fameuse type so that their close relationship with one another and with Fameuse may be readily recognized by the pomologist.

If the reader will consider the foregoing paragraph closely he will see what is meant by the important terms "type" and "group." They present the essentials of pomological classification. If our multitudinous varieties are ever to be classified, it must be by putting them into groups; and these groups must cluster about the more conspicuous, permanent and recognizable types.

In common language these groups are sometimes called "families," and some men speak of the "Fameuse family," the "Ben Davis family," etc. The idea is the same; but the terms "type" and "group" are more precise and convenient, aside from the fact that the word "family" has been preempted in plant study with another technical meaning.

MEETING OF NOVA SCOTIA FRUIT GROWERS.

HE 31st annual meeting of the Nova Scotia Fruit Growers' Association has passed into history. In point of attendance and in the interest shown in the discussion, it was one of the best ever held by this association, though there was great diversity of opinion on most of the subjects considered. The transportation problem, spraying and agricultural education were the three principal questions discussed, though there were a number of others of considerable importance.

President J. W. Bigelow, in his annual address, stated that he could find no record of any export of fruit grown in North America in 1801, which has developed in the last century to a product now valued at over four hundred million dollars a year. In Canada the annual value of fruit grown may be safely estimated at eight million dollars, and in Nova Scotia it has passed the one million dollar mark annually. The past year has been one of the most disappointing and unprofitable for fruit culture in Nova Scotia ever recorded. Starting in June, with abundant blossoms, our apple crop developed unfavorably, with a yield of less than 300,000 bbls. of inferior fruit, one-half of which never should have been marketed, and one-third of which was lost in drops and culls; and having to compete with a good crop of superior fruit from U.S. and Ontario, as well as Europe, in foreign markets, the price has ranged from 0 to \$2 per barrel, and in many cases money has been remitted to pay expenses. A number of unfavorable conditions conspired to render this year's fruit business unfavorable: 1st—An unusually mild winter, with frequent cold changes, injured the fruit buds; 2nd—A cold, wet May produced an increased fungous and insect development; 3rd—A terrific wind storm, on the 12th September,

destroyed one-fourth of the best of the fruit, and injured both trees and fruit; 4th—An unusually severe frost, early in October, injured the fruit and produced a skin rot; 5th—The worst class of steamers ever employed in the carrying trade, cooked and practically destroyed the fruit during the 15 to 20 days cargo was in transit. The plum crop, where carefully cultivated, was abundant, and is estimated at twelve thousand baskets (10 lbs. each). Pears were a good crop, and of fair average quality. Peaches, strawberries and other berries were a good crop, and brought remunerative prices.

The 200 bottles of fruit in acid, and 80 boxes and 30 barrels of Nova Scotia fruit sent to Paris Exhibition, and exhibited in cold storage by the Canadian Government, proved to be one of the most important and attractive exhibits of food products of the world there shown, and our Nonpareils and other long keepers were shown, after being twelve months in cold storage, perfect in flavor and keeping quality. The exhibit of food products from Canada at Paris has developed our trade to all parts of the world, and orders for Canadian apples are now being filled from almost every country. The bottled fruits shown at Paris, supplemented by 65 Cochran cases of this season's crop of apples, will be staged in the exhibit at Glasgow, Scotland, from May 1st to Nov. 1st, 1901.

The School of Horticulture is progressing most favorably under the able direction of Prof. Sears, with 64 students, representing nearly every county in the province, and many from N. B., P. E. I., and England. Prof. Sears' lectures through the province, on practical points of fruit culture are developing an interest in fruit culture of great value, and the fact is being demonstrated that every county can raise superior fruits in

favorable localities. It has been found necessary, in order to successfully conduct experiment work, to extend the grounds, and C. R. H. Starr, Esq., has donated a piece of land joining the school grounds, for ten years, at the nominal rental of \$1.00 per year, with the privilege of purchasing. By careful management the expenses of this work have been kept within the income, and when the government fully realizes its value and importance to the whole province, it will be induced to increase the grant and extend the work. Most of the graduates of this school are either successfully prosecuting fruit culture on their own account, or are receiving large salaries in horticultural work—noticeably, E. Higgins, C. Blair, S. Hooper, S. Morse, Miss Watts—and there is an increasing demand for graduates at the highest salaries paid any profession.

Transportation—This difficulty is now more disastrous to the N.S. shipper than at any time in twenty years. The following important facts may assist us in removing the difficulties: 1st—That the Halifax and St. John merchants have had and always will have sufficient influence with any government to subsidize a line of boats to London for their own benefit even if they are totally unfit to carry apple cargoes, or whether they carry any apples or not,—hence fruit-growers need no longer contest the subsidy question; 2nd—The line subsidized this year by petition from and for the benefit of fruit-growers, from Annapolis, has given the worst service of any in the trade for twenty years; 3rd—All attempts to combine fruit-growers to form a shipping company for their own interests have failed. A commissioner appointed by the government to inspect all steamers carrying apples, with power to prevent shipment of inferior fruit in unsuitable vessels, improper stowage, etc., would remedy much of the wrong complained of, and would this year have saved fruit-growers in N.S. over \$100,000.

The president suggested establishing branch associations in every county (the first branch is now being organized in Antigonishe), as has been successfully accomplished in Ontario and the U.S. To carry out this and other useful work, it is necessary to increase the government grant from the paltry sum of \$300 to at least \$1,000.

We have estimated the value of the fruit industry to N.S. as follows:

1. Annual value of fruit crop, average about.....	\$1,000,000
2. Net receipts for apples sold in G.B., 1899 crop....	800,000
3. do. do. 1900 do.	200,000
4. Value of orchards now bearing, 9,000 acres, at \$500 per acre.....	4,500,000
5. Annual additional value to permanent wealth of province by young orchards, 5,000 acres, at \$200 per acre	1,000,000
6. Number of men employed in fruit culture 7,000.	
7. do. do. in barrel and box factories, nurseries, fertilizer and other industries required by fruit culture, 4,000.	
8. Freight paid for fruit to railroads.....	60,000
9. Freight paid steamboats for do.....	200,000

In the matter of *transportation*, the fruit-growers feel that two points should be remedied: First, they consider that the rate paid on apples is too high, owing largely to the place which apples are given in the present classification of freight. The meeting took action upon this phase of the question, passing the following resolution, which was introduced by Mr. Peter Innes, vice-president of the association: "Whereas the freight classification of apples by the railways of Canada was fixed at a time when the production was small and prices high; and whereas since that time production has enormously increased, while prices have been continually falling; and whereas in Western Nova Scotia apple-growing has become a great staple industry, averaging 500,000 barrels a year; and whereas the said classification has to be submitted to and approved by the Governor-in-Council, therefore *Resolved*,—That this association, recognizing that the present classification does not suit the altered circumstances, and is oppressive to the apple growers and shippers of the province, do respectfully memorialize the Governor-in-Council to take the subject into early and favorable considera-

tion, it being suggested that, in the opinion of this association, apples should be placed at least on an equal footing with flour." The second matter of transportation which received attention was in reference to the character of the steamers which are allowed to carry freight upon the subsidized lines running between London and points in Nova Scotia. It was shown beyond any question, that the vessels which have this year been carrying apples from Halifax and Annapolis have, in some cases, been unfit for such a purpose, and have furthermore been allowed so free a hand in the matter of when they should leave port, how the fruit consigned to them should be handled, and how other freight, such as deals, should be stowed in connection with the apples, that great damage has been done to the fruit. Secretary S. C. Parker said he had personally examined the account of sales of more than one thousand barrels of Gravensteins, and they would not average 10c per barrel net. It was felt by all that some action should be taken which would remedy this state of affairs in future; that steamers which are subsidized by the Government should be rigidly inspected, and so supervised as to insure the proper handling of the fruit, and such a system of ventilation as should give the greatest possible assurance of the apples carrying satisfactorily; and, furthermore, that the failure of the steamship companies to meet the above requirements should be deemed sufficient reason for the withholding of the subsidy. Prof. Robertson said that this plan had already been adopted by the government to a certain extent, but that our difficulty had been, the present season, that freight rates were so high and suitable vessels so scarce that steamship owners were not as amenable to this form of moral suasion as in ordinary years. Some of those present favored the abolition of all subsidies

to steamship companies, while others thought that poor and dishonest packing was the great cause of the difficulty; but the great majority, while admitting that some of the first was not packed as it should have been, considered the steamships as largely responsible, and favored the appointment of an inspector for each port from which apples are being exported, who should have power to see that fruit was properly handled, properly stowed in the vessels, and to examine fruit which he had reason to suspect was fraudulently packed and condemn it if necessary.

The subject of *spraying* was given an entire session for discussion, and even then the interest was not exhausted. No particularly new features were brought out, but it was evident that in many cases spraying had not given as satisfactory results in 1900 as could be desired. Yet every one who took part in the discussion expressed himself as determined to continue the practice; one man saying, in reply to the question whether he intended to persevere, "Yes, or go out of the fruit business." But it was very evident that during such a season as last year, when there is so much rainy weather during the early part of the season, the early spraying is all-important. An example illustrating this fact was given. Two men sprayed their orchards; one twice, the other three times. The first man sprayed once before the blossoms opened, the other not till they had fallen. The result was that the man who began early and only sprayed twice had better fruit than the man who sprayed three times, but didn't begin till after the blossoms fell. Doubtless different weather would have modified this result, but it seems probable that the early spray is always of great importance.—*Farmers' Advocate.*

THE KIEFFER PEAR.

[Gist of the discussion before the recent meeting of the N. J. Hort. Society.]

PICKED early, when two-thirds grown, and ripened in dark with quality at its best, the Kieffer pear brings highest price, but is too tender to ship to any distance. In the fall of '99 a great demand was had from canners. Many of these to save expense of sugar used a chemically prepared sweet having 50 times the strength of sugar. When first canned it was a perfect success, but later the acid employed in the preparation discolored the fruit and also dissolved the tin coating of can, causing syrup in can to have a metallic taste, and eat holes in the iron plate, resulting in total loss of the canned fruit; one canner lost \$50,000. Where sugar was used in canning the result was financial success, yet too few put up to test the market. In 1900, while in some sections a slight demand was had for canning, no sales were made in the heavy producing sections.

Prof. Smith said the San Jose scale is here to stay and that hereafter only careful growers could raise Kieffer. Both scale and oriental pears come from Japan, but the scale does not thrive on them, but on American crosses it is at home. The scale can be kept in check with care, but the man running the sprayer must use judgment in spraying. Crude petroleum rightly applied will kill scale.

Rust or clouding of fruit, Prof. Smith said, is not caused by an insect. Prof. Halstead, state botanist, was not prepared to say what the cause was, as it might be one of several. It might be inherent. All Japan pears had a natural discoloration of skin—skin very thin and tender, easily discolored. Excessive spraying and any spraying for cloud was excessive, as it does no good. It is a corky growth on the surface of fruit, when skin has been injured, and is favored by shade, lack of ventilation, want of sunshine and heavy

dews, as oriental pears originated in a dry, hot sunshiny climate.

As to the advisability of planting more trees, D. D. Denise, one of the largest pear growers in the state, said this is a difficult problem to solve. The tree is a nice, rapid grower, bears early and quality is better than when first introduced. Quality now equal to many other varieties of pears now marketed. It is more proof against insects and blight than most other varieties. Local markets are over crowded, yet there is plenty of demand from more distant markets. Mr. Denise's little Kieffer orchard of from 1200 to 1500 trees has netted him more money than all the rest of his farm. In 1900, \$100 p. a. net yield 200 bbls. p. a.; price no lower than best apples, and yield much greater. He keeps heads of trees open for air, sunlight and ventilation, to guard against cloudiness of fruit. Trees succeed best on sandy soil not too rich, but they must be taken care of. An orchard 10 miles from Mr. Denise's from which ungraded fruit was sent to market, netted owner only 7c. p. bbl.; "not a paying crop."

John S. Collins, the heaviest Kieffer pear grower in N. J. said crop of 1900 did not pay. No sale for surplus, as canneries did not want them and those placed in cold storage were doing no better. Pears for cold storage should be picked before they color, and as soon as the stem separates readily from limb. Manure sufficiently to give size, color and quality; a starved tree never gives good quality fruit.

In the light of all that can be gathered, I consider the future of the Kieffer pear an open question, but let no one plant it unless he is prepared to watch and care for them. The season of 1900 has not been a fair test so far as N. J. is concerned as to its future.—*J. B. Rogers.*

THE CHAMPION PEACH.

Among the first trees planted, the first to ripen good specimens, and the earliest in its season, was the Champion. Little trees only three years from the bud matured a few handsome peaches about Aug. 1, whose beautiful color and white juicy flesh gave excellent promise. At four years they bore a moderate crop, which rotted badly on the trees. This year, for the first time, a full crop has been gathered. The trees, now doubtless at their best, were cut back fully half their growth for the first three seasons, forming low, well-branched heads, and during the past two years when the fruit buds were killed by cold, they have reached a large size. In common with most of the peach trees grown, they were loaded, this year, to their full capacity.

The Champions began to ripen—and a pretty sight they were, for no rose is redder—the 30th of July. The last peaches held on in good condition the 12th of August. For two full weeks an ample family supply was enjoyed, the fruit of two and a half (one half grown) trees. The largest quantity picked in any one day was a full bushel. The whole yield, not exactly measured, was perhaps three to four bushels. No fruit is handsomer to the eye. Of good medium size, regular and nearly round in form, and flushed with an extraordinary fullness and delicacy of color, these early peaches give one a fresh impression of the actual beauty of this peerless fruit. But, like other beautiful things, the Champion falls short of perfection. It has the primary disadvantage of being a clingstone. It shows some tendency to rot. It has a very thin, tender skin, which makes transportation difficult. After a day of rain, when the peaches were fully ripe, this tenderness of the skin was more marked. The ripe peach is juicy, fragrant and full of flavor, so that its attrac-

tive appearance does not deceive. As it 's the first native peach fit for market, it commands a ready sale and good prices if offered locally.

It appears, therefore, in summing up the results of this small trial, that while it is probably too perishable for ordinary market growing, the Champion Peach has a decided value for the home orchard in its earliness, good quality, and, in favorable seasons, abundant productiveness. It lengthens, at the end most generally appreciated, the season of an unrivalled fruit, and no one who loves to grow fine fruit need grudge the care of a few trees that mature so quickly, even should they yield no more than a single full crop. With peach trees, at the North, it is well to have a row of seedlings always in the garden to keep up the supply. But it is a mistake to trust to mere seedlings, when the choice varieties are so easily reproduced by the simple process of budding.

In the plat considered, the Crosby was the variety relied on for the main planting, its "iron-clad" qualities, as to hardiness and general reliability for a cold-climate peach, being much urged at that time. So far, the result has failed to justify expectations. At the present time the trees are hanging heavy with half-grown peaches. The Elberta, though some what more advanced, is still hard and green. The Lemon Free will precede it a little in ripening, and this has proved, with us, a fine peach.

All these trees are included in the general plan of a large mixed orchard or fruit garden, in which room has been found for a considerable variety of pears, plums, cherries, grapes, etc. The situation gives room for quite a variety of choice in location, as it includes a gravelly knoll, sloping gradually to a moist meadow bordering on wet

land. The general character of the soil is a warm, sandy loam, easily tilled and productive. A considerable portion of the space occupied comprises an old garden, rich in humus and heavily manured before planting. Wood ashes is the only dressing

applied in growing the peach trees, most of which occupy the well-drained slope of the knoll. All have made a fine growth and are in thriving condition.—Country Gentleman.

GROWING AND EXHIBITING FRUIT.



ALL dessert fruits to be of value for market or attractive for home use must be handsome in color and form. Cooking fruit, to be of the best quality, must be fair and fine grained. So we have several things other than size to consider in the fruit exhibits, and I think it important that the judges of fruit at our larger exhibitions should try to encourage the growing of fruit of the best quality as well as of the largest size; for instance, a very large apple of poor color or quality is of but little value, and a small strawberry of fine color and quality is equally undesirable, from a commercial point at least, so we should consider that size and color must go together to make a perfect fruit.

Very many varieties of fruit are shown, especially at our agricultural fairs, long before they should be ripe, and there is an endeavor to get a color similar to what the fruit should have when ripe, but this is all wrong, because we do not want Baldwin apples ready for the table in September, or Northern Spy in October.

Judges who consider color the most important quality in fruit are likely to do more for the good of the fruit interests than those who consider size of the fruit of the first importance; but the ideal fruit is one of good size and color.

There is a difference of opinion among fruit

judges in regard to imperfections. Some claim that a plate of fruit is no better than the poorest specimen, and they will often throw out a plate because of a defect in a single specimen, when those remaining are much better than any other whole plate. Other judges claim that if the eleven are better than any other twelve they should have the prize.

While size and color are in general the two most important qualities in the fruit exhibition, when we consider the peach we should use a great deal of care, or we may encourage the exhibition of the product of disease. Perhaps there is no other fruit that is increased in size and color as is the peach by disease. It has been so that there was no use in showing sound peaches at some exhibitions, as the prizes were all given to prematurely ripened fruit. I have seen prizes for Crawfords, Early and Late, given to peaches between which one could hardly tell the difference. It is not uncommon to see the prizes given to ripe Elbertas and Crosbys early in September, when the sound fruit shows no signs of ripening. These displays of diseased peaches may take better with the public and are certainly more of an attraction than good sound fruit, but I believe they are against the promotion of horticulture.—*H. R. Kenny, before Mass. H. Society.*



TIMELY TOPICS FOR THE AMATEUR.—XIII.

IN the February number of the Horticulturist a list was given of what may be very properly termed iron-clad and easy-to-grow varieties of herbaceous perennials, or permanent border plants, as well as a short list of annuals suitable for young beginners, or those inexperienced in plant culture. Many of the varieties there mentioned are possibly well-known to readers of the Journal, and may, perhaps, have been grown by them, as with a few exceptions most of them can be fairly classed amongst what are generally styled as old-fashioned flowers. But this is no reason for discarding or rejecting them from our gardens of the present day, more especially as this class of plants are again becoming popular with the flower-loving public, chiefly for ornamenting lawns and flower gardens. The production of a better type of plant and flower than the originals, as well as the introduction of new species and varieties, has doubtless aided greatly in bringing these pretty and useful plants into deserving popularity again, after a period of apparent neglect.

Some of the plants mentioned may not, perhaps, be as suitable for town or city gardens as the more choice greenhouse

plants, but a judiciously selected and well-grown collection of herbaceous perennials is an acquisition to any lawn or flower garden, whether in town or country.

To the list of plants already referred to may be added a few low-growing flowering shrubs, provided there is room in the border for them. The double flowering *Spiraea prunifolia*, *Kerria Japonica*, *Wigelia rosea* and *W. alba*, *Deutzia gracilis*, *Deutzia parviflora*, *Spiraea bumalda*, *Spiraea Anthony Waterer*—one of the premiums for 1901—and a plant of the herbaceous hibiscus (*Crimson Eye*), will be found suitable for planting in a mixed border of plants.

The taller growing deutzias, forsythias, lilacs, spireas, etc., might possibly be used in a border of large dimensions, but for use on small lawns these latter are better suited for planting as single specimens, or to hide from view some unpicturesque feature in the back-ground, such as fences or out-buildings.

No mixed border, however, would be complete without a few hardy garden lilies. One of the best of these is the grand old *Lilium tigrinum* (tiger lily), a variety seldom seen in gardens at the present time. *Lilium candidum*, *Lilium superbum*, and *L. Canadense*, are also among the best kinds

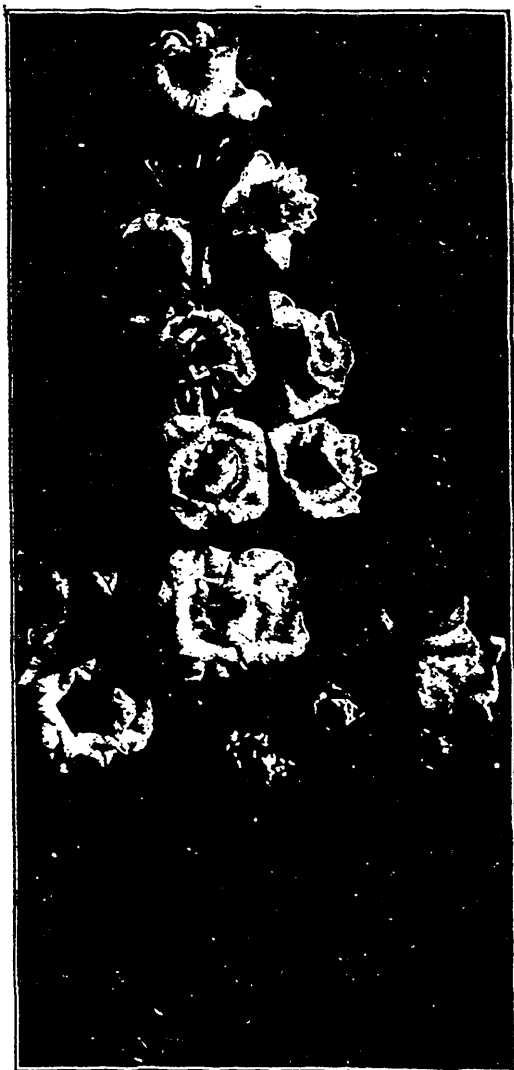


FIG. 2021. CAMPANULA MEDIA.

for flower gardens. The Japanese lilies such as *L. rubrum*, *L. speciosum* and other varieties, are not so hardy as those before mentioned, requiring careful protection in winter, and are besides very liable to disease. A clump of lily of the valley should also be planted where they will not be disturbed, and in a position that is not too much exposed to the hot sun in summer. A north or east aspect suits these sweet little gems of the lily family the best.

A rose bush or two of the *rugosa* type, or some of the hardiest varieties of the hybrid perpetual roses, cannot possibly be dispensed with. This completes a list that will, with very little care and attention give pleasing and satisfactory flowering results, from early spring until late autumn.

And now a word or two as to the lay-out and preparation of the border. It is very difficult to do justice to this subject except in a very general way; as the surroundings of different residences and sites are of such a varied nature and character.

Most suburban, or even farm and country residences, however, usually have a small plot of lawn or garden attached to them, where a mixed border of plants would be a decided acquisition, and lend a cheerful and home-like appearance to the surroundings.

The most suitable place for a border would probably be either on the east or west side of the lawn, leaving the more central part occupied by a walk, flowering shrubs, a bed of greenhouse plants perhaps, or of plants from the window. A shade tree or two will also be necessary somewhere on the lawn. Shade trees are indispensable in summer time for the thorough enjoyment of a lawn. It will be necessary to keep clear of these trees in planning out the border, and also avoid getting too near to pine trees, and hedges of pine or cedar, as the roots of these would rapidly absorb all nutriment from the plants growing near them.

A directly south aspect is not a good position for a border, especially if it is immediately in front of a dwelling house or a high close wall or fence. The reflected heat of the sun, and an imperfect circulation of air, would scorch the plants up very quickly during the heat of summer. An open situation, having an east or west aspect, leading out and away from a picket or wire fence would be a good position.

A north aspect is not objectionable if the position is not too heavily shaded from the south.



FIG. 2022. LILY OF THE VALLEY AND NATIVE FERN.

An average width of six or seven feet gives room for a nice display of plants ranging in size from quite dwarf plants, to those five or six feet in height. The size of the border, either in width or length must be determined by the number and size of the plants it is to contain, as well as the space that these will require when they have fully developed their growth. Most of the dwarf shrubs mentioned would require to be about three feet away from any other permanent plants. The perennial plants and lilies should have about two feet clear of space from other plants of a like nature. The annuals and gladiolus bulbs and any other plants considered desirable, could be placed between these, so as not to crowd or over grow them. (In mentioning gladiolus on page 65 of January number the word "perennial" was inadvertently inserted.)

The most desirable kind of soil to succeed best with almost all kinds of garden flowers, is without doubt soil of a rich loamy nature. The latter kind however is not by any means really necessary, as many shrubs and perennials succeed splendidly in heavier soil. It is very essential that the border should be well drained, as there is nothing more detrimental to herbaceous perennials or shrubs than badly drained ground.

The border should have a good coating of well rotted stable or cow manure, and be dug thoroughly and deep. This should be done the previous fall, or quite early in the spring if possible. Every vestige of roots of perennial grass and weeds should be carefully picked out when digging, especially twitch or spear grass, as this latter is very troublesome in herbaceous borders if not kept under control. The best time for planting

or transplanting herbaceous perennials is about the first week in May, just as the plants begin to show signs of new growth.

The iris, paeonies, dielytra, and hemerocallis could be planted in the autumn to advantage. A light coating of well rotted manure and the ground around the plants lightly forked over every spring, besides keeping free of weeds, will be about all the attention most of these plants require, when once they become established. Some of the herbaceous plants may require to be divided up and transplanted once in every two or three years. Varieties of the iris and perennial phlox (*Phlox paniculata*) are amongst those that may benefit by being transplanted as often as mentioned. Most of the other herbaceous plants will not require to be disturbed for perhaps six or seven years. The little care and labor that herbaceous perennials require in their culture, and their general adaptability to grow and flourish, in

spite of drought in summer or frost in winter, make them particularly adapted for planting in gardens where very little care and attention can be given them.


If a mixed border of plants containing all of the varieties mentioned is not desirable, a small bed or border with a plant or two of Iris, Dielytra, *Hemerocallis flava*, *Phlox paniculata*, *Campanula persicifolia*, *Rudbeckia* (Golden Glow) a clump or two of *Lilium superbum* or *Lilium tigrinum*, and a few of the annuals mentioned in the February number of Journal will be found to be a desirable and profitable selection.

These will with only ordinary care, assist materially in brightening up the garden, besides giving a fair supply of cut flowers far the house during a great part of the summer, especially in a year or two when the perennial varieties have become well established.

Hamilton.

W. HUNT.

A LILY POND.

 ANY one who has a nice lawn should, by all means, have a lily pond. It is easily made and a thing of beauty. There are many ways of making these ponds, either of stone, brick or masonry, but as these are all expensive, we will give our attention to another sort that will cost but a few dollars and at the same time last for years. Have a wooden tub made similar to a wooden cistern or water tank, with straight sides and about four feet deep. It can be made round or square, and as large as you wish, but should not be smaller than six feet across. This size will hold six or eight bulbs. One foot from the bottom have a hole two inches in diameter, and a plug to fit it, which must be put in from the inside, and project far enough to make its removal easy. Mark the top of the tank

exactly above this plug, so that you may know where to find it when the time comes to let out the water. This tank should then be sunk in the ground to within two inches of the top, and then make a gravel border around it of about eighteen inches. When preparing the hole in which to put the tank, determine upon which side will be the place where the plug is to come and dig a space about eighteen inches across, and as deep, and fill it with small stones. This is done in order that the water will have a place to drain into when the plug is removed.

Give your tank a coat of waterproof paint on the inside, and of tar on the outside, before sinking it in the ground. This preserves the wood from decay, and the tank will last much longer. When your tank is all ready, fill it up to the plug with pond

mud, or any rich earth which has at least a quarter of cow manure, and put in your lily bulbs. Run in the water gently so as not to disturb the soil, and fill but a few inches above the bulbs. When they show signs of growing, add more water, until at length it is almost or quite full.

When the water freezes to the depth of a half inch, reach down and remove the plug,

and fill the tank full to the top with dry leaves or loose hay, and lay boards over the top. Any tender lilies like callas, should be removed and either placed in the cellar in a pail of mud, or dried off. When the hard frosts are over in the spring, remove the litter, add a little well rotted cow manure, and any new bulbs you wish, and gradually refill with water.—*Vick's Magazine*.

GREENHOUSE, WINDOW AND GARDEN.—III.



THE greenhouse and conservatory will require extra care as the spring approaches. Close attention will have to be given to watering all plants thoroughly that are in full vigorous growth, as well as those in flower. Shading and ventilating will also be features of routine work, and the fires must on no account be neglected during the treacherous weather often experienced in March. Roses in pots and those growing on benches will require plenty of water, liquid manure once a week, and syringing with clear tepid water once a day, if possible, to keep them going.

Azaleas, that have done flowering, should be kept in a warm but not too sunny part of the house. They require to be kept quite moist at the roots and syringed daily, after flowering, to encourage the new growth. If necessary they should be re-potted after the flowering period.

Greenhouse ferns should be re-potted at once, if not already done. It is always advisable to re-pot ferns before the young fronds have made much growth. An inch of drainage in the pots, and a compost of equal parts enriched loam, sand, and leaf soil (or peat) suits nearly all ferns.

Varieties of Rex Begonias may be propagated now from mature leaves; or the thick fleshy stems, or rhizomes, can be cut into lengths of about two inches, and struck in

sand. The base of the mature leaves with about an inch of the stem attached—and the latter inserted in sand so that its junction with the leaf is just under the sand—will strike readily and make much better plants than those grown from the thick stalks.

Winter flowering begonias, when out of flower, such as *B. incarnata*, *B. fuchsiaoides*, *B. foliosa*, can be cut back a little; cuttings of these can be struck as soon as the cuttings can be secured. Young plants of these succeed better, as a rule, than old plants kept over. *Begonia rubra* rebels against much pruning, it needs liberal treatment as to soil, potting, etc., but does not like cutting back.

The new begonia, "Gloire de Lorraine," promises to be a valuable addition to winter flowering begonias. It is inclined to be a little fickle, and requires care in growing; but its large clusters of bright rose-pink flowers, that it produces in such profusion, gives even a small plant when in flower a most beautiful appearance. It requires very similar treatment to *B. incarnata* but is not quite as robust as that variety, being more of the habit of *Begonia Bruantii*.

Tuberous begonias and fancy caladiums may be safely started now. Barely cover the tubers, or bulbs, in sand in a warm part of the greenhouse. Water them thoroughly once, and never allow them to become quite

dry afterwards. Caladiums like equal parts of sand, leaf soil and loam, and plenty of drainage in the pot. Tuberos begonias succeed very well in ordinary potting soil, enriched sandy loam.

Cuttings of allamandas can be taken now with every prospect of their striking root easily.

There is still time for cuttings of coleus and similar plants for bedding purposes.

Chrysanthemum cuttings started now will often do better than if taken earlier, especially if grown steadily on all summer. If the plants are to be grown on benches in the greenhouse all the summer—which seems to be the popular and most successful method of growing them now—the cuttings can be taken as late as May and will give good flowering results. In fact bench grown plants seems to be the only method of growing them, to successfully avoid the destructive fungous disease (*Puccinia Hieracii*) commonly called “rust,” that has played such havoc of recent years amongst these popular autumn flowers. Spraying the young plants with a solution of sulphide of potassium, made by mixing one-half ounce of sulphide with a gallon of water, seems the best remedy at present known for checking this destructive disease. Picking off and burning the leaves on the first appearance of the minute rusty-brown spots on them, will also help to check its ravages. The introduction of new seedling varieties, the use of preventives, and careful culture may perhaps be successful in eradicating what promises to banish chrysanthemums from our greenhouses as pot plants, unless some remedy can be found that is more effectual than any known to plant-growers at present.

Carnations and violets suffered very badly a few years since from a similar disease; although not quite eradicated it is not as destructive as it was.

The many new and really grand varieties

of carnations recently introduced have brought these ever-popular flowers into even greater prominence than at any time before in their history. The immense and sweetly perfumed flowers of these new varieties cannot help but make them acceptable to all flower-lovers. Any of the following standard and well tested varieties would be suitable for the amateur grower, viz. : Mrs. Lawson and Mrs. J. Dean, pink ; Flora Hill or White Cloud, white ; Gen. Maceo, crimson ; Gold Nugget, yellow ; and Mrs. Bradt, red and white striped.

Cuttings of carnations should be potted into 2½ inch pots as soon as rooted.

Sow a packet of primula obconica grandiflora seed, and grow the plants on in the house all the summer ; they are easy to grow, and one of the most remunerative of all the primula family.

Seeds of annuals required for early flowering should be sown now. Cosmos seeds are best sown early to ensure getting full returns from them before frost sets in.

Ventilators at the top of greenhouse or conservatory should be opened as often as the weather will permit, so as not to allow the temperature to get too high. A temperature of 75° to 80° in the day time, and 50° to 60° at night, is suitable for a mixed collection of plants. A higher temperature than this is not only injurious to many plants but it induces a rapid increase of insect pests.

A slight shading may be necessary for palms, ferns, etc., on hot sunny days, to prevent scalding.

Keep the floors well dampened, syringe and water the plants early in the day.

If you have room in the greenhouse, sow some mustard seed, pressed slightly into the top of some soil in a shallow box. Water the seed and not cover it with earth, it will give you a nice salad early in the season.

WINDOW PLANTS.

Plants in the window will require to be watered thoroughly at this season of the year, so that all the soil in the pot is moistened.

Pots of the hardy varieties of narcissi, such as *Von Sion*, *Horsfieldii*, etc., should not be allowed to dry out after flowering. If kept growing they can be planted out in the border in spring. If left undisturbed for a year or two they will make a useful and permanent addition to the border. These bulbs may perhaps flower the second year in the window, but they are uncertain. Tulips and Dutch hyacinths can be treated the same as recommended for the narcissi; cuttings of fuchsias, geraniums, lemon-scented verbena, and similar plants, will strike readily in pots in sand now, if young vigorous growth can be secured for cuttings. Begonia cuttings have better be left until April or May before attempting to strike them. A few pots of petunias, verbena, cosmos and lobelia, should be sown,—if these are grown—as they require to be early to give good flowering results.

Nasturtiums for window boxes should be sown now, two or three seeds in a 3-inch pot, is better than sowing them thickly in a large pot, as they do not transplant as well as many other varieties. Mignonette should be sown eight or ten seeds in the same sized pot as for nasturtiums, to secure early flowers.

Watch out for sudden dips of cold weather in March.

Canna roots may be potted early in April and grown on until it is time to plant them outside at the end of May or early in June when all danger of frost is over. Hydrangeas, oleanders, and similar plants can be brought out to the light, and started into growth. Pot these into larger tubs now if necessary, before they have made much growth.

THE GARDEN.

Pruning should be finished up as early as possible, especially grape vines and goose-berry bushes. These require to be done early to secure the best results from them, but currant bushes and all fruit trees should not be left too late before pruning.

The material for a hot-bed should be in course of preparation. If the manure is fresh from the stable, throw it into a heap for a week or ten days. It should be turned over once during that time if possible before making up the bed. A hot-bed, even if ever so small, is very useful for a few pots of early tomatoes, peppers, cauliflowers and cabbage seed. If about six inches of good soil can be put on top of the manure, some lettuce, radish, and mustard can be sown in rows. These will give a few dishes of salad that will be both acceptable and healthful.

Place an apple or sugar barrel, from which the top and bottom ends have been removed, over a clump of the earliest rhubarb. Cover the top of the barrel over at night, or during cold days; this will probably give you a dish of rhubarb a week earlier than unprotected roots will.

Hardy roses should be pruned early in April as soon as the buds show signs of growth.

If you have any tender perennial or biennial flowering plants that are not protected, more especially hollyhocks and biennial campanulas, sprinkle a little long strawy manure over them. It often happens that these and similar plants are well protected by snow during winter, but during the early spring months are often exposed to severe frosts at night, and hot sun in the day time. This alternate freezing and thawing is very trying to plant life. Many garden plants that have pulled through the winter splendidly under the snow, are killed out by the fickle and varied weather that

often prevails during March and early April.

A portion of the covering on beds of Dutch and other bulbs may be removed toward the end of the month, if the weather is favorable. Put the lightest portion of the covering back on the bulbs for a short

time, this can be removed when all danger of frost is over. This allows the tips of the growth that are often peeping above the ground, to harden gradually, so as to be able to resist any light frost that may come later on.

Hamilton.

W. HUNT.

FLOWERS FOR ENTHUSIASTS.



FEW flowers always awaken my enthusiasm. Among them are hollyhocks. So capable is this flower of improvement and endless variety, that it pays us for every effort at careful culture. But it is sure to run back if neglected. I find it essential to select seed of the best varieties, and plant them when ready in beds somewhat closer than needed; then I dig out the poorer sorts when they come to bloom. Better yet, when you get a fine strain, divide the roots and so multiply it. I grow this flower along my fences, and border my fields with it. It is grand at a distance, running from purest white to nearly black. One strain of white hangs down its semi-double flowers like lilies. Sow in September or October for next year's planting; but if sown late it had best be in a cold frame. No flowers should be grown without special attention be paid to improvement. If we are slovenly enough to allow the fruits or flowers to retrograde on our hands, we are retrograding also.

Another flower that I am never tired of is the lily. It is a constant wonder that, cheap as these bulbs now are, they are not more generally in cultivation. I find hyacinths everywhere, but not lilies, except coarser sorts. I expect that one reason is that the very soil and richness that suits a Hyacinth kills a lily. Manure is death to most of them. The Longiflorum or Easter sorts are generally classed as hardy, but are not abso-

lutely so. An open winter generally puts an end to them.

It is best to cover all lilies with some coarse litter, leaves or evergreen boughs. The Candidum is so superb that it should be grown in masses everywhere. The fragrance is superb. I have had Auratum in bloom for nearly three months. I think this fine lily is sporting in its habit. The early flowering have shorter stalks and smaller flowers but richer colors. The Speciosum is for general planting about as valuable as Candidum, being quite hardy and noble in colors and fragrance. I hope thousands will invest this fall in a bed of lilies. Select Candidum, Speciosum, Auratum, and the little Siberian lily, with a plenty of native meadow lilies.

I heartily recommend still more attention to gladioli. The flower is magnificent in coloring, and of endless variation in flakes and stripes and selfs. The Gandavensis stock offers us thousands of truly fine varieties, and any one can with attention raise for himself choice seedlings as good as the best. For five years past these have been rivalled by a strain of *Gladiolus Lemoinei*. Now we have a very fine set of crosses from *Purpurea*, *Auratus* and *Gandavensis*. These will stand a good deal of attention. So far these flowers are scentless. This is a great drawback. It may be in time remedied by farther efforts in the way of selection and crossing. *Turicensis* is a new cross offered this spring. -- *Popular Gardening*.

NOTES FROM THE BIOLOGICAL DEPARTMENT OF THE ONTARIO AGRICULTURAL COLLEGE—II.

THE PROTECTION OF SHADE TREES IN TOWNS AND CITIES.

IN the February, March and April numbers of the *CANADIAN HORTICULTURIST* of last year, the writer called special attention to the care of shade trees, and dealt somewhat fully with some of the main causes which were operating to produce the diseased conditions so commonly met with in our towns and cities. The causes were grouped as *physiological*, such as lack of air, water, and food; *insects*; and *fungi*. It is evident that there is an awakening in several quarters in the matter of care of shade trees, if one may judge from the reports of some of the horticultural societies. The planting and protection of shade and ornamental trees have been left too much to the individual who has made no special study of the conditions under which trees attain their best development.

The citizens of New Haven, Connecticut, have already taken this matter in hand, and as a result of their action a bulletin has been issued on "The Protection of Shade Trees in Towns and Cities," which deals with some of the causes of the present condition of the shade trees of that city, and makes certain recommendations to the authorities. A summary of the causes stated in the bulletin may be interesting to our readers.

Briefly stated they are, (1) Old age; (2) Lack of water and air about the roots; (3) Lack of plant food; (4) Mutilations of the trees; (5) Poisoning by illuminating gas; (6) Insect injuries; (7) Lack of knowledge and care in planting; (8) Electric currents from wires.

The recommendations made for the removal or abatement of these causes are valuable, and should be studied carefully by all interested in shade tree protection.

1. "For old age there is no remedy," although the life of the trees may be lengthened by proper care.

2. Trees would grow better if they were planted on the lawn side of the walk instead of near the curb. The space for the growth of the roots would be greater, watering could be done just as well, and the trees would be out of the reach of mutilation by horses.

3. To supply plant food, an annual spring dressing of an odorless fertilizer is recommended. The composition of the fertilizer is given as follows:

50 lbs. nitrate of soda.

300 lbs. cotton seed meal.

100 lbs. acid phosphate.

100 lbs. muriate of potash, and costing about \$8.00.

This is sufficient for an acre.

4. City By-laws, if enforced, would soon prevent many of the mutilations of trees, and all trees near the curb should be protected by frame or by wire netting.

5. The damage done to trees through poisoning by gas could be lessened by compelling the gas companies to pay for the injuries done.

6. Against insect attacks, spraying with some poisonous substance for leaf-eating insects, and with kerosene emulsion or whale-oil soap solution for sucking insects is recommended.

7. The cause of unsymmetrical trees is usually poor nursery stock, or poor judgment in selecting the species, or unwise location of trees, or improper planting, or lack of care after planting. A town or city forester is a necessity if the foregoing defects are to be remedied. The forester's

duties would be to take the entire care of the trees in the streets, to apply remedial measures wherever necessary, to remove dead trees and plant new ones, and to es-

tablish and manage a city nursery, which would supply the new trees when required.

W. LOCHHEAD.

O. A. C., Guelph.

CHERRY TREE ON THE TABLE.

SOMETHING new is promised in the way of a society fad, and the very wealthy New York set, which is always looking out for fresh opportunity to squander money, is pleased greatly by the novelty of the idea, says the Boston Transcript.

During the present winter no really swell and properly-equipped dinner table has been considered complete on a festive occasion in the house of any fashionable millionaire unless there is a dwarf cherry tree for an ornament—at least one cherry tree, that is to say, though there may be as many as half a dozen. These trees will bear actual fruit, ruddy ripe, which the guests are expected to pluck for themselves when dessert time arrives. Not more than 100 cherries will be on each tree, but, inasmuch as they will be of extraordinary size and delicious quality, besides being so unusual a luxury, this number should suffice for a small dinner party at all events—one of those ideally managed entertainments at which, in accordance with accepted theory in such matters, the persons present are not fewer than the graces nor exceeding the muses numerically.

These dwarf cherry trees have been evolved by the ingenuity of French gardeners, and during the last winter they have been the vogue in gay Paris. That they cost a good deal of money goes without saying, inasmuch as the fruit has to be forced by special processes in the greenhouse, and, the little crop once picked, there cannot be another until a twelvemonth

later. The French are wonderful at this sort of thing, having developed the art of horticulture along certain lines to a point undreamed of on this side of the Atlantic.

The cherry trees, as they appear on the dinner-table, are four or five years old, but have trunks only about an inch and a half in diameter. They have never been permitted to grow more than three feet high, being kept cut down to that point, while most of the branches are lopped off, so that the little tree has a wholly artificial aspect. At the proper time it is set in a pot and placed in the hothouse for the purpose of forcing it to fruit. And finally, when the fruit appears, most of the cherries are removed, while as yet immature, with a pair of scissors, only 100 or so being allowed to ripen. As a result they have a size and quality far superior to the best of ordinary cherries.

Rich people in Paris are not less reckless of money expenditure than are those of the smart set in New York, and there is probably no place in the world where fruits of rare or exceptionally delicious varieties command such extravagant prices. The first cherry that was offered in the Paris market this year brought 20 francs, or \$4—not a cherry tree, mind you, but a single cherry. But then it was the only cherry for sale on that day, and so it may be said to have been relatively cheap. It was purchased by Count Boni de Castellane, or, more correctly speaking, was bought for him by his order.



The Canadian Horticulturist

COPY for journal should reach the editor as early in the month as possible, never later than the 15th.

SUBSCRIPTION PRICE, \$1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter or Post-Office Order are at our risk. Receipts will be acknowledged upon the Address Label.

ADVERTISING RATES quoted on application. Circulation, 5,500 copies per month. Copy received up to 20th.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events or doings of Horticultural Societies likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of Horticulturists.

ILLUSTRATIONS.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, etc., but he cannot be responsible for loss or injury.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

DISCONTINUANCES.—Remember that the publisher must be notified by letter or post-card when a subscriber wishes his paper stopped. All arrearages must be paid. Returning your paper will not enable us to discontinue it, as we cannot find your name on our books unless your Post-Office address is given. Societies should send in their revised lists in January, if possible, otherwise we take it for granted that all will continue members.

NOTES AND COMMENTS.

OUR HORTICULTURAL SOCIETIES will be pleased to learn that arrangements are now being completed by the Department of Agriculture for the sending of a lecturer to visit each affiliated society at an early date. We have great expectations of the results that will be gained by the regular visits of such a lecturer, for he will familiarise himself with the possibilities before such societies, and encourage them in working out the greatest usefulness. Gathering large numbers is not the aim in sending out the lecturers, but rather to gather together the few in each place who wish instruction, if it be only a baker's dozen of people in somebody's parlor.

FOR FERTILIZING ORCHARDS, says Farm and Home, leguminous plants have great value. The details of their growth, cul-

tivation and utility should be studied, that we may learn how and when to use the different varieties to best advantage. Their roots penetrate deep into the soil, making it more porous, and decompose more or less of the hardest substances with which they come in contact. The roots also support bacteria which have the power to change the free nitrogen of the air into plant food. The thick epidermis of the leaves prevents rapid evaporation from their surface. The heavy foliage shades the ground checking the loss of moisture by the direct action of the sun and wind, at the same time keeping the temperature of the soil at a lower point through the hot months than if clean cultivation was used.

MR. WARREN H. MANNING, in a report recently made to the park commissioners of

Des Moines, Ia., summarizes briefly the advantage of parks to a city as follows: "They preserve for all time beautiful landscapes that would eventually be mutilated or destroyed by private ownership. They provide a place where the native flora and fauna may be preserved and perpetuated. They have a sanitary value in removing noxious gases from the air and in preventing the contamination of water courses. They promote public health by providing a place where nervous and sick people can frequently go to enjoy quietly a complete change of scene and surroundings, as well as a place where energetic and youthful persons can frequently engage in all active forms of recreation. They have an educational value by providing a place where growing plants and animals, geological, topographical and soil conditions and methods of propagation and cultivation may be studied. They add to the value of adjoining private property by giving an assurance of permanently attractive conditions. They make a city more beautiful and desirable as a place of residence, conditions that add to the pleasure and comfort of all citizens and tend to keep in and draw to a city people of wealth, influence and leisure."



FIG. 2023. FLEMISH BEAUTY PEARS.

OUR friend, Mr. W. G. Ross, of Picton, the energetic Secretary of the Picton Horticultural Society, kindly sends us the accompanying photograph, showing two Flemish Beauty pear trees raised in the Custom House garden. The two trees bore, last fall, about fourteen bushels of fine fruit.

QUESTION DRAWER.

The Best New Grape.

1202. SIR.—Please say what you consider the best and newest grape out for size, flavor and earliness of ripening.

HENRY LAMBERT, Orlawa.

The finest grape of those recently introduced is the Charlton, so far as quality and the size of fruit is concerned. It is being introduced by John Charlton & Co., Rochester. We do not know how hardy or productive the vine itself is. Campbell's Early is another excellent variety of the Concord type, as early as Moore's Early and superior to that variety. The vine is a

strong grower and hardy. It may be purchased from any of our nurserymen.

Trees For a Small Lot.

1203. SIR.—Please advise me as to how many plum, pear and cherry trees and grape vines I can plant on a city lot fifty feet wide and two hundred feet deep. The house and shrubbery would take about one-half, leaving about 50 x 100 for trees.

M. E. B., Toronto.

In a city lot the trees could be kept well headed in and planted a little closer than in the country orchard, but for standard pears, and for plums and cherry trees, twenty feet apart is close enough. If our correspondent

were to plant four rows lengthwise, one along each border, and two rows in the interior, the rows would of course be about sixteen feet apart, a little close but possibly allowable if the trees in the rows were 20 feet apart. Planted this way, twenty-four trees could be planted in the space under consideration, or eight trees of each kind of fruit. If dwarf pear trees were used, they could be planted about twelve feet apart. Grape vines are usually planted from eight to ten feet apart in a row, with a wire trellis, or they could be made to climb upon a fence or woodshed.

Apples for Export.

1204. SIR.—I have fifty trees of Russet apples which are not doing well on my land, heavy clay, and I wish to top graft them. Will you please say what sorts you would recommend for export, and what is your opinion of the York Imperial.

R. McINTOSH, Newcastle.

The York Imperial is highly valued as an export variety, where it succeeds, but we know of no one who has tested it in Canada. The varieties most valued with us for export are—Summer: Duchess, Astracan and Alexander. Fall: Blenheim, Gravenstein. Winter: Cranberry, Spy, King, Ontario, Baldwin and Ben Davis.

Kieffer Stock for Top Grafting.

1205. SIR.—I note in your issue of January 1900, page 21, an address from Mr. G. T. Powell, of New York State, on top grafting. He says Keiffer is good stock for "Anjou" and "Bosc," and he is apparently speaking from experience. Four years ago I grafted five Duchess d'Anjouleme on good healthy Keiffer stocks, and one Duchess on seedling stock. The union was perfect and the growth healthy and luxuriant, but the following year one of the Keiffers died, root and branch. The other trees have kept up good healthy rapid growth in the tops, but the trunks are gone with dry rot. The Duchess on seedling stock is all right. This is my experience with Keiffer stock for top grafting. Have seen Keiffer recommended as the best of stock for grafting in a good many articles in the periodicals. Would like to hear from others on the subject, and would feel obliged for an expression from yourself.

W. B. STEPHENS, Owen Sound.

The writer has an orchard of bearing Keiffer pear trees, the fruit of which is evi-

dently to be very soon in disfavor in all markets on account of its poor quality. He is therefore determined either to root out the orchard or top graft with some other variety. A year ago the writer begun by setting scions of Anjou and Bosc, as directed by Mr. Powell, and hopes soon to be able to speak from experience upon the suitability of this stock. In the meantime we would be glad to have others relate their experience.

Pears on Apple Stock.

1206. SIR.—I find it necessary to either remove some Northern Spy trees or graft them to other fruit of less luxuriant growth. Can I top-graft with Keiffer pears on Northern Spy, and would the Bosc succeed if grafted on apple stock?

Yours, etc.,

MEAFORD.

We have tried apples on pear stock but not pears on apple stock. The union was good, and has remained healthy for the past twelve or fifteen years, but the scion never was very vigorous nor very fruitful. We do not think Keiffer would succeed at all on Spy, and is not of any value even if it did; Bosc would be more likely to do well, but some variety of apple would succeed better.

Hybrid Plums.

1207. SIR.—I am thinking of doing a little experimenting on a small farm I own, by planting out a number of stones of hybrid plums, in the hope that in this way possibly some really good ones may be obtained, hardier than most of the Europeans. I wish to obtain as many of these stones as possible, but do not know where to get them. Can you help me by putting me in communication with persons who grow such plums? I refer particularly to such as America, Climax, Gold or Golden, Gonzales, Juicy, Apple, Wickson, etc. I know I am late for this year (unless some can be found under the trees), but I wish to make arrangements for next year. I will gladly pay for the seeds. M.

Would any of our readers who have pits of these plums on hand, or who expect to have them next season, please write to M., care of CANADIAN HORTICULTURIST, Grimsby.

Sutton Beauty Apple.

1208. SIR.—The apple called Sutton Beauty is highly spoken of by name as a valuable sort. Do you think it safe to plant largely for growing fruit for winter shipment to Europe, in a district where

Baldwin, Golden Russet, and Ben Davis give good results? Please describe it and its good and bad features, both tree and fruit, and oblige
Georgetown, P. E. I. F. G. BRYER.

This apple has proved valuable in the United States, but is not grown commer-

cially in Canada, and not yet tested long enough to say whether it is adapted to our country. It is rather large, roundish in form, yellow, with crimson check. It ripens in December.

Open Letters.

Export Packing and Bills of Lading.

SIR, - On my return home to Guelph I gave Mr. Hutt my name and membership fee of your Association. I would like very much to be kept posted of any meetings you may have, although I did not say much at your meeting. I have been very much interested in the business, and have been trying to get this act about long before your association had the matter up.

You remember I suggested that our ocean bills of lading should be made out so that should the fruit miss the boat originally intended, for the Foreign Freight Agent of the delivery Railway Company would hand the apples over for the next steamer sailing, the ocean bills would be made out so as to go per any line of steamer—Allan, Dominion, Beaver—so that the insurance policy would be made out accordingly for any of the three lines to Liverpool, and in the same way to other ports, and this would save our apples from laying over in the box cars and hot wharf in Montreal over a week sometimes.

If you have any printed reports of our meeting with the Hon. Sydney Fisher, I would like to get two or three copies so as to send them to receivers interested.

I would like the Bill to deal with size of the so-called Apple Bushel Box for export; the California box is one size, and the Australia box another size, and the Ontario varies from that of the United States box.

The Ontario apple case for export, inside measure is 21 inches long, 10½ inches wide and 11 inches deep.

The Australia apple case is made 20 x 9 x 15, outside measurement, ½ inch side, top and bottom and ¾ inch ends.

I believe if the barrel was made 25½ inch stave, we would get much better barrels, as that is the size of the stave used for flour for the West Indies, etc., and I think the flour trade in Canada will come to the 25½ inch stave bye and bye.

R. A. BUCHART, Guelph.

A Good Beginning.

SIR, - I am starting a fruit garden; of course it is on a small scale, but you know, sir, that from the little acorns the big oaks grow; and so a few rods of ground planted to fruit now, may in time be increased to acres. Last fall I planted about 400 berry bushes and intend to plant 500 more this spring; and I intend to plant 40 plum trees next fall. The few plum and pear trees I planted

some time ago are doing nicely. Besides the fruit garden, I have started a Ginseng plantation; I have 500 seeds planted in the forest and about 2,000 small plants ready to transplant this spring. It takes some time to get stocked with Ginseng, as the seeds require eighteen months to germinate, and then a period of five to eight years before the roots are ready for market. I tried an experiment with peanuts last summer on three different kinds of soils, and I had very good success. I planted a small paper of seeds, and had two quarts of peanuts when dried. I cannot raise them here for profit, but with care can grow a few in the garden for home use. I am the first one in the township of Franklin that has started a combined garden stocked with fruit, ginseng and peanuts.

HERBERT FRIER.

Franklin Centre, Province of Quebec.

Too Many Varieties.

A subject which is of great importance to apple growers of this country, particularly at this time of the year when many are ordering trees for spring planting, and one which I intended bringing before the meeting at Brantford had there not been such an amount of other business, is the fact that the number of varieties of apples grown generally in Ontario is decidedly detrimental to our export and home trade. A few of the leading varieties are known in Great Britain, and while many other sorts may be equally as good in themselves, the fact that they are not generally known to the public makes them less valuable to the dealer.

Straight lots of one variety, or carloads containing not more than three or four, always make the best returns. For example, I had at that meeting two sales sheets from Liverpool, one lot was a load of Canadian apples of thirty varieties, and the other a shipment of Maine Baldwins; the former of course was an exceptional case, but as Messrs. Woodall & Co. wrote me recently, if our growers would get rid of 90 per cent. of the outside sorts they would all make far more money.

While I would not wish to say anything to disparage the enterprising efforts of our fruit-growers by seeking new varieties by way of improving on the old, I would ask them to bear in mind that Canada has now many varieties which suit our climate, are well known products of our country, are good carriers in their various seasons, and meet with a good demand, and until some varieties are established as improvements on these, it is advisable to stick closely to the old sorts.

Among the leaders, I would submit Baldwin, Ben Davis, Blenheim, Canada Red, Colvert, R. I. Greening, Bottle Greening, King, Stark, Ribston Pippin, Golden Russett, Rox. Russet, Spy and Snow.

While the British market has generally shown a preference for red fruit, this year it has especially shown its appreciation of good Greenings; and it is often the case that when reds are plentiful, good Greenings in season command as good prices as most others.

We look upon the Baldwin as the King of Fruit, as an all-round apple from every standpoint, but the others in their season often sell higher, so it is well to have a proportion of them all.

Many apple growing sections of the U.S., especially Maine, are noted for shipments of straight varieties, and while it is not advisable to plant one sort only, it is well to limit the number of varieties.

Yours faithfully,

Toronto.

EBEN JAMES.

Origin of Scarlet Pippin.

SIR,—I saw in the report of meeting of Fruit Growers' Association, you said Mr. Jones was the originator of Scarlet Pippin apple. I wish to tell you he is not. The Scarlet Pippin apple originated over forty years ago at the back door of the residence now occupied by H. B. Heather, Florist, about one mile west of Brockville, and near the St. Lawrence river, where part of the old tree can still be seen. I have known it for over thirty years, and can say it is one of the best selling apples on the Ottawa market.

Brockville.

ALBERT ABBOTT.

Report on Plants and Trees Received.

SIR,—I will at this late date give you a report of the trees, plants, etc., received from annual distribution by the Ontario Fruit Growers' Association. I have not kept a list of dates when received. First on the list is Simon's plum, which, with me, is tender, and has died down to ground. The Russian apricot, of which I received two at different times, both died below where budded. The Pearl gooseberry has done fairly well, giv-

ing small crops of fruit. Conrath raspberry is hardy, and bears a fair crop. The Sand cherry is very tender, and has died out. The Siberian pea tree is perfectly hardy, and has blossomed last two years. I also received two Oregon pines and two Douglas firs. The firs were small and neither grew. One pine is growing, and is perfectly hardy. Crimson Rambler rose is doing nicely; it has bloomed twice, but was badly used up last summer with thrip. The gladiolus bulb sent out was very fine. The wistaria did not grow, it was dead when received. In 1899 I received two Columbian raspberry bushes; they had started from the tops and dried up when received; neither of them grew. I also had two varieties of Russian apple trees, but accidents happened to both and cannot report on them. I have a scion from one, growing in another tree, and may report later. Two years ago last autumn I received three crowns of club-form mammoth rhubarb from our friend, the late Charles E. Brown, of Yarmouth, and last summer had a stalk weighing two pounds, and several others nearly as large. I have experimented with several varieties of grapes, but the Early Amber is the only one that ripens here. I have also tried peaches, but the blossom bud always winter-kills. I tried laying them down, and that fixed them outright. Nearly all varieties of apple do well here. For fall use the Gravenstein is by far the best; the Baldwin, Golden Russett and Greening are hardy. I had two Wealthy trees; one bore well for three years, and then the bark came off all around the tree, and it died; the other is growing. Ontario is hardy and a good bearer but the fruit is quite sour. The Old-nburgh is all right but will not compare favorably with Gravenstein either in tree or fruit. Hubbardson's Non-such, I think we have two varieties of, one corresponding to plate in vol. xiii, Canadian Horticulturist, April number, the other came from Yarmouth, and was said to be true to name by the late C. E. Brown. The tree is tender and inclined to canker. The fruit is more conical and not as red, but fine grained and of beautiful flavor.

HENRY C. SAHEAN.

New Tusket, Dec. 28, 1900.

Our Affiliated Societies.

CAYUGA.—The County has granted us \$50.00 and the town, \$20.00. We hope to have a public garden or two; keep Arbor Day by planting out 500 trees; make the beginning of a hedge about Court House Grounds; while there will be a more or less enthusiastic rival among the individual members over their private gardens. At our High School we have one tulip bed of 1500 bulbs; it was magnificent last season.

With a considerable expenditure ahead of us for a new society will you kindly send us a list reliable houses to whom we may write for price lists and discounts.

Cayuga Society.

Yours truly,

A. K. GOODMAN.

COBourg.—The annual meeting of the Horticultural Society was held in the Council Chamber on Wednesday, Jan. 9th. The Treasurer's report shows that the total receipts were \$294.44, expenditure \$255.88, leaving a balance for 1901 of \$38.56.

For the year 1900 each member received "The Canadian Horticulturalist," and a premium from the same. In addition to this, our society distributed the following premiums: 6 gladiolus, 1 peony, 2 anemones, 8 hyacinths, 3 lilies, (candidum) all of 1st quality, which retails for not less than \$2.50. Such liberality on the part of the Directors should be an incentive in securing a

large membership for the present year. Will the old members kindly renew the subscription before the 15th of Feb., and select their premium for the year 1901, and all who wish to become members will please call on the Secretary, Mr. A. W. Pringle, as soon as convenient, so that they may have their names on the list and thereby secure the full benefit of the premium to be distributed for the present year. Mr. C. Waite is authorized to receive subscriptions.

COBURG HORTICULTURAL SOCIETY.—The annual meeting of the Coburg Horticultural Society was held in the Town Council Chamber according to statute.

The Secretary, H. J. Snelgrove, read the report of the Directors. The society last year purchased their flower bulbs in Holland, and the Directors recommend that the same be done this year, as the experiment had proved very successful. The Secretary was representative to the Ontario Fruit Growers' Association, and succeeded in securing the meeting of the Association at Cobourg next year.

On motion of Mayor Huycke, seconded by Mr. Barker, the report was adopted, and a vote of thanks tendered to the Secretary.

Mr. D. Denton, Treasurer, reported receipts for the year, \$223; expenditures, \$221.42.

The Society then proceeded to the election of officers.

The Secretary said he had received a communication from Mr. Woolverton, stating that the Fruit Growers' Association could not yet promise

to send out lecturers this year. But Mr. C. C. James, Deputy Minister of Agriculture, had kindly promised that he would address the Society at an early date.

Mr. Denton spoke about the spring distribution, and he thought each member should report upon the plants received by them. Instead of getting all they could for the money, they should get the rarest and latest varieties.

Mr. Snelgrove gave a short report of the Ontario Fruit Growers' meeting at Brantford. He said the convention was composed of about 200 of the best men in the province. He wished to get the names of the fruit growers of this county, so as to invite them to attend the meeting, which will be held in November.

Major MacNaughtan said it would be well to appoint a deputation to wait upon the Counties' Council, and get them interested. This was a matter that interested all fruit growers' very much.

The President, Vice-Presidents and Secretary were appointed a committee to wait upon the Counties' Council.

The following officers were elected by the Directors:

Secretary—Major Snelgrove.

Treasurer—D. Denton.

NOTE. Since the above meeting at which my letter was read, arrangements have been completed with the Department of Agriculture by which a regular lecturer, and perhaps two of them, will be sent annually to address our affiliated societies.

L. WOOLVERTON.

OUR BOOK TABLE.

BOOKS.

THE PRINCIPLES OF VEGETABLE GARDENING, by L. H. Bailey, pp. 458. New York. The McMillan Co., 1901. Price, \$1 25.

This is another addition to that excellent Rural Science Series, edited by Prof. L. H. Bailey, of Cornell University. Science is progressive, and books written years ago upon fruit and flower culture are now becoming antiquated in many particulars. Prof. Bailey's works on the other hand are fresh and up to date; besides they classify all information in such a manner as to be of the greatest service to the cultivator. The book is divided into two general parts: Part 1st, General View; part 2nd, Vegetable Garden Crops: Part 1st includes the layout of the plantation, glass, soil and treatment, tools, seed, management, working and storing; part 2nd, Root crops, Tuber crops, Bulb crops, Cole crops, Pot Herb crops, Salad crops, Pulse crops, Solanaceous crops, Cucurbitaceous crops, Sweet Corn, Sweet Herbs, Perennial crops.

We highly commend this work to our readers.

FARMERS' GUIDE to Fertilizers and their services, published by German Kali Works, 91 Nassau street, New York.

REPORTS. Michigan Horticultural Society for 1899. Missouri Horticultural Society for 1900.

Central Experimental Farm, Bull. 36. Results obtained in 1900 from trial of plots of grain, fodder corn, field roots and potatoes, by Wm. Saunders, L. L. D., Director of Experimental Farm.

CATALOGUES.

FRUITS, ETC.—The 1899 supplement to New Creations in Fruits and Flowers, Luther Burbank, Santa Rosa, Cal. Horticultural Establishment. Baltet Bros., Troyes, (Aube) France. Emerald Plum, History, Description, etc., E. D. Smith, Winona. Dominion Nurseries and Fruit Farms, St. Catharines, Ont., 1901, Smith & Reed. Graham's Annual Wholesale Price List, A. W. Graham, St. Thomas, Ont. Northern Grown Fruit and Ornamental Trees, J. H. Wismer, Port Elgin, Ont. Central Nurseries, 21st Annual, A. G. Hull & Sons, St. Catharines. Choice Strawberry Plants, Chas. H. Snow, Cumming Bridge, Ont. Grape Vines, Lewis Roesch, Fredonia, N. Y. Green's Nursery Co. Catalogue, Spring, 1901, Rochester, N. Y. R. M. Kellogg's Great Crops of Small Fruits, Three Rivers, Michigan. J. G. Harrison & Sons, Nurseries, 1901, Berlin, Md.

ORNAMENTAL TREES AND PLANTS.—Thos. Meehan & Sons, Germantown, Pa., nurserymen and landscape gardeners. J. Gammage & Sons, London, Ont., Plant Novelties. Gladiolus Trade Price List, Geo. E. Dickson, 1 Broadway, N. Y.