

FIG. 2-24. MR. J. W. BIGELOW, PRESIDENT N. S. F. G. A.

THE CANADIAN HORTICULTURIST



** APRIL **

NOVA SCOTIA FRUIT GROWERS.

AT the especial request of the editor, Mr. Bigelow, the time honored president of the Nova Scotia Fruit Growers' Association, has forwarded us his cut for use in our journal. We had the pleasure of an acquaintance with him at the World's Fair, in 1893, when he was in charge of Nova Scotia's fruit exhibit, and we learned to appreciate his genial manner and eminent ability.

Mr. Bigelow has done much towards the development of the fruit industry of Nova Scotia, both by example and by precept. Ever since 1890 he has deservedly held the position of president. Through his efforts an excellent School of Horticulture has been established at Wolfville, and efforts are being made to introduce into the legislature a scheme for the establishment of a model orchard of six acres in extent, in every county of the province. This is somewhat after the scheme of our fruit experiment stations, only a little more ambitious, for a model orchard is not easy to make, and its name would bring plenty of criticism.

In Mr. Bigelow's annual address before the association at Halifax, on Wednesday

evening, Feb. 13th, he drew attention to the excellent provincial exhibit made at Paris, and regretted that no steps had been taken for a display of Nova Scotia fruit at the Pan American; and, referring to the value of her fruit crop, he gave the following as an approximate estimate of the same :

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

The report of the N.S. School of Horticulture was presented to the association by Mr. W. C. Archibald, of Wolfville, chairman of the Board of Control. Mr. Archibald lives at Wolfville, and has made himself widely known throughout the province, for



FIG. 2025. W. C. ARCHIBALD.

his success in fruit growing, having transformed a piece of unimproved land into the well known Earncliffe fruit gardens. He has been foremost in trying plum growing for profit, and has proved that this fruit is more successful even than the apple in Nova Scotia. Last season he marketed 50,000 lbs. of plums off twelve acres of a plum orchard. Peaches, pears, cherries, quinces, etc., have been grown by him on the same land between his apples and plums.

Mr. Ralph S. Eaton made a vigorous and eloquent speech in favor of a union of the Agriculture School, at Truro, and the School of Horticulture, at Wolfville, into one first-class Agricultural College for the maritime provinces.

Mr. Peter Innes introduced a resolution for better ocean transportation of apples, seeking the appointment of a commission that would look into present abuses in this trade and see that they were corrected.

The same gentleman also introduced a resolution looking to an improvement in

railway freight classification which reads as follows :

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 continuously 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 meet with the altered circumstances, and is oppressive to the apple growers and shippers of this province, do respectfully memorialize the Governor-in-Council to take the subject into early and favorable consideration, it being suggested that in the view of this association apples should be placed at least on an equal footing with flour.

The Standard apple barrel was also mentioned by Mr. Innes and the following extract from the amended Weights and Measures Act was given :

Chap. 37, 1900—An act to amend the Weights and Measures Act. Assented to 7th July, 1900.

Her Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows :

1. The section substituted by section 2 of chapter 28 of the statutes of 1899, for section 18 of the Weights and Measures Act, chapter 104 of the Revised Statutes, is repealed, and the following is substituted therefor :

18. All apples packed in Canada for export for sale by the barrel in closed barrels shall be packed in good and strong barrels of seasoned wood, having dimensions not less than the following, namely ; twenty-six inches and one-fourth between the heads, inside measure, and a head diameter of seventeen inches, and a middle diameter of eighteen inches and one-half, representing as near as possible ninety-six quarts.

2. When apples, pears or quinces are sold by the barrel as a measure of capacity, such barrel shall not be of lesser dimensions than those specified in this section.

Another clause provides for a penalty of 25 cents a barrel for breaking this law.

Of the English apple markets, Mr. J. H. Burgess of Canniny spoke as follows :

While in England this season I made inquiry as to the prospect for disposing of evaporated and canned apples, and found there was an unlimited demand for this product. I interviewed a number of firms dealing in these goods, and found them ready to do business. They like canned apples, as in this form they are always ready for use. The

early shipments of Gravensteins this year were really not good for anything when they arrived in London. I saw the Mediana's cargo, and the apples were utterly useless. When the Gravensteins commenced to arrive in these bad steamers it corroborated the opinion that they entertained over there, that our Gravensteins were a failure. There are some Gravensteins that came out of the barrels which looked fairly well, but the flavor was gone. I firmly believe eight days is the proper time to deliver them: the high temperature in the ships' hold causes the apples to decay rapidly. To successfully ship soft apples we need a 15-knot service. Last spring apples brought fabulous

prices—as high as 32s. per barrel—from twenty-four to thirty-two shillings per barrel, I saw Fallwaters selling at thirty-two shillings, and Golden Russets at thirty-four shillings. There is no danger of Canada producing more apples than is demanded.

I was in Paris a month, and I took particular notice of our apples sent over there in cold storage for the Exposition, and I asked the man who had charge of that exhibit if there was any danger of our supply of apples exceeding the demand. He replied there was not. He said he could sell eight hundred thousand barrels in Germany alone if the quality was guaranteed.

PRUNING OF FRUIT TREES.



THE PEACH.—This tree requires special pruning to keep in a compact and stocky form, as it tends to grow largely at the ends of the branches, and to produce few laterals on the main branches. While the trees are young, at least one-half of the last season's growth should be cut off during the latter part of the winter, varying the amount cut from different parts of the trees so as to produce a regularly formed head. As the trees grows older, this pruning reduces the number of fruit buds, and thus lessens the cost of thinning and improves their growth. It also often becomes necessary to cut back some of the main branches well into the centre of the tree to force a lateral growth of new wood, without which the long branches would soon break down when heavily loaded with fruit, or with foliage wet with rain in a high wind.

THE PLUM AND CHERRY.—The special pruning required by these two fruits is the heading in of strong leading shoots, while young, to cause a stocky and compact growth that can be easily cared for. Pinching the shoots while young will often accomplish the same end.

THE GRAPE.—The grape vine will stand more pruning without injury than any other fruit crop we grow, and, by the modern method of training, the whole vine is practically renewed every two years. The fruit is grown on the vigorous young wood of the last season's growth, and the more vigorous

and well ripened this wood is, the better will be the product. Pruning may be done at any time after the leaves fall up to March 1st. Summer pruning, or pinching is practiced to force the growth where desired, that is, into the fruiting canes and into the next season's fruit, and no surplus canes should be grown that must be cut and thrown away at the end of the season.

RASPBERRY AND BLACKBERRY.—The fruiting canes of these fruits should be cut out as soon as the crop has been harvested, that all growth may go into the new canes that are to produce fruit next season. Such new canes as are to be preserved for next season's fruiting should have the end taken off when they reach three feet in height, and all weak canes and those not needed to make a well-stocked field should be treated as weeds and be hoed or pulled up.

CURRENTS AND GOOSEBERRIES.—An annual pruning is generally given these fruits, cutting out all wood over three years old, keeping the bushes in a compact and stock condition that will hold the fruit up from the ground, where it will not be splattered by the soil during heavy rains, and leaving a limited amount of strong wood two or three years old, which produces larger fruit than will grow on old canes. All canes looking sickly, which generally indicates a borer in them, should be cut out and burned as soon as discovered.—*Prof. Maynard, in Massachusetts Experiment Station Report.*

PRINCE EDWARD HORTICULTURAL PARLIAMENT.

WITH us here in Prince Edward Island, horticulture is making steady and substantial progress. It is true there are some who feign to have no faith in scientific methods and still adhere with a tenacity worthy of a better cause to the rule of thumb in horticulture as well as other matters, but their number is growing smaller and smaller, and beautifully less. Ignorance dies hard anywhere but especially in high places, and it is really wonderful how sometimes one has to fight for ordinarily advanced methods with those who should be formally engaged in forging forward along those lines. The exigencies of the times project some people into positions for which they have not a single qualification. It takes time to smother all those things out; it will do so finally. The true friends and lovers of horticulture must be persuaded to be patient and unselfish and on no account allow their enthusiasm to cool on account of certain incongruities in organization, no matter how thrilling.

The year that has just closed has been a fair fruit year in Prince Edward Island. It has not been by any means a full year, however. There was a considerable yield of early apples thrown upon the market even earlier than the season by the great gales which swept over the province in August. We have no way of handling a glut of this kind. The later varieties were also affected by the winds—blown off where not protected and rendered valueless. In some cases, however, and with some varieties, the harvest was satisfactory, both with regard to quality and quantity. Spraying as well as thinning, when necessary, undoubtedly makes far superior quality in wet years, like last especially.

The annual meeting of our F.G.A. took place at Charlottetown on the 6th and 7th

of February. We had the great pleasure of having Professor Macoun, horticulturist, of the Central Farms with us. In order to get him we had to hold our meeting immediately after that of the Nova Scotia association which he was attending. February, on account of its boisterous nature, is no month to hold meetings here, but we sometimes have to make shifts to suit circumstances. The weather was anything but favorable for a large attendance of country horticulturists, and therefore they did not come out in such numbers as we could have desired, but a number of citizens filled up the places and all the sessions were fairly well attended.

At the first session, after the reading of the minutes, the president delivered a well written and carefully thought out address on the general purposes of the fruit industry under his presidency. He asked for action to prevent the introduction of the San Jose scale and pleaded for government assistance to carry out the schemes of the association. The members of the government, including the Premier, were present. His address was unanimously received and ordered to be printed.

The first paper—that of the writer on "Forestry and Horticulture"—was then read and elicited a discussion which was carried on through all that session. This important question of Forestry is doubly important to P. E. I., "scarcely 100 years ago," said the paper, "and Prince Edward Island was one insular forest; to-day not enough lumber could be found on it to keep one good steam mill agoing the year around; many of our farmers cannot secure wood enough on their holdings for the kitchen stove alone; a majority of the holdings are absolutely without protection from the sweeping winds; the springs and streams which once watered the meadows

have dried up and disappeared with the forest, and sunburnt fields, once laden with luxuriant crops, scarcely render any return to the husbandman's toil. The climatic influence arising from these changed conditions, although not so marked as in inland countries, are altogether against us."

It is not strange that an island like Prince Edward with such a coast line should be a great loser by floods and freshets as the great woods which covered it are cut away. The loss to the fruit growers has been extensive, too, and if measures be not taken to repair the general removal of the forest, there may well be grave doubts entertained as to the island's future as a fruit country. This feature professional horticulturists have been quick to grasp, as will be seen by another excerpt from the same source.

"Writing to me last summer just before taking passage for Europe, Professor Macoun, whom we are all glad to have with us here to-day, said :

"Whenever and wherever you can, preach the preservation of your woods. If the protection afforded by your fine woods is removed, I fear that fruit growing there will not be nearly so successful as it promises to be.' Nobody doubts the truth of this statement. But without a healthy public sentiment, an awakening to the knowledge and needs of the case, as well as proper action on the part of the government, what can be done? Prof. Macoun, no doubt, believes that our province will lose its adaptability for fruit raising, not only by the fact that the loss of the forest may bring adverse climatic conditions, but also because we must also protect our trees from the summer gales to mature good fruit, no matter how well they may do otherwise. This question of protection enters very largely into the economics of fruit-growing. The past year has demonstrated that, beyond the peradventure of a doubt. Ontario alone lost millions of

dollars by her storm-swept orchards, the other provinces were also heavy losers, and here those who had no proper windbreaks have lost their entire crop. I remember well asking an enterprising tree agent from New Brunswick, where proximity to the United States makes men veracious, if it wasn't necessary to get up a good windbreak in this country before attempting to grow apple trees. 'If our apple trees won't stand it out in the open I won't ask any man to plant them,' was his answer. They might stand it in the open, but stand is about all they would do. We want fruit—and to produce fruit in this country, apart from all other considerations, we must protect it, after it has formed on the trees. I have a windbreak on the N., N. E., and N. W., the exposed points of my situation, and while my neighbors' trees were swept early in August, I harvested my entire crop. The importance of forest protection to the fruit growers of the country cannot then be overestimated."

The Government which owned all the land originally has never moved to preserve any portion of our beautiful forest. We might be receiving a big revenue from our timber lands to-day, when revenue is so much needed, had some prudent system of reserve been adopted. The timber is gone and monetarily the country has not benefited to the extent it ought, while in every other way the wholesale slaughter of trees has been a great curse to it. The practical question is, what are you going to do about it? The representative men of the country, the Governor, Premier and ministers of the local government, Sir Louis Davies and the visiting professors and the press declared the discussion most timely and no doubt it will be productive of much good. This resolution crystallized the whole matter :

Moved by A. A. Moore, seconded by D. P. Irving, and

"Resolved, That the Government be asked to give its serious consideration to the

vital question of forestry by making reserves of the public lands wherever possible and encourage private afforestation in every way possible."

The next session was taken up principally with Prof. Macoun's masterly address on horticulture with special application to the condition of our province, and the general discussion which followed, as well as the questions with which it was punctured, proved how practical the gentleman had made himself. In this province we have been planting too close, pruning too scantily, spraying too rarely and not getting rid of objectionable stock by top-grafting or otherwise quickly enough, and, young as we are in the business, we have developed dishonest packing. The professor took up the samples of apples on exhibition and spoke most learnedly on their adaptability to our soil. From his examination of tree, fruit, our soil and climate he would recommend the following apples to be grown here :

Fall and early winter—Wealthy, Alexander, Wolf River, McIntosh Red, Fameuse, Gravenstein.

Winter—Ontario, Baldwin, Stark, Ribston Pippin, Ben Davis.

Sir Louis Davies, Minister of Marine and Fisheries, being present, delivered a very encouraging speech. He had long since convinced himself of the suitability of upland soil for apple culture. Indeed we could grow some varieties better than any place else. He knew that everybody marvelled at the expansion of the cheese industry on the island, and the amount of money it brought into the province. The apple industry would, he verily believed, do better if directed and fostered. He was delighted with the Fruit Growers' Association and the previous discussions he had listened to, and while it appeared that when any question, such as the proper package of fruit or the matter of marking and inspecting packages, came up on the floor of the House of Commons it was the signal for the greatest divergence

and variety of opinion, and it did sometimes appear as if it were next to impossible to have members reach common ground. He would promise to give the weight of his voice and vote every time on the side of the recommendations of the Fruit Growers' Association.

All this was very encouraging and the association, after considerable discussion on these important matters, adopted the following general resolution and named Rev. A. E. Burke, D. P. Irving, M. L. A. and A. A. Moore to carry out its provisions :

"*Resolved*, That a committee from the Fruit Growers' Association correspond with committees from the Nova Scotia and Ontario Fruit Growers' Associations with a view to secure a uniform package in which to pack fruit, and a uniform mark, as well as competent inspection, for its contents."

It was the general opinion that steamship space, properly fitted with cold storage, should be secured for the autumn months, at least for the consignment of fruit to Britain. The shipments made last year, although rolled about and not specially handled, turned out well; this year not much fruit awaits shipment, some Ben Davis from Mr. Bovyer's orchard being the only considerable consignment I know of, and they will take almost any handling. Among those who are giving the question any study there seems to be a very marked preference for the Hanrahan system of cold storage, so successfully employed by the Ontario government, and it is hoped that it will come more generally into use.

The other matter which engaged the attention of the meetings, especially the splendid paper of Mr. John Johnson, on "Some phases of Island Horticulture," although of an entirely local nature, were full of interest and profit for those present, and merited and received their unstinted praise.

The Association elected Mr. Edward Bayfield, who was its first president after incor-

poration, again this year, and he no doubt with the old Board will do much to advance its interests in this opening year of the century. There is much to be done to fully

develop the fruit growing possibilities of Prince Edward Island, and we must earnestly bend our energies to the task.

Alberton, March 1, 1901. A. E. BURKE.

CENTRAL EXPERIMENTAL FARM NOTES—XV.



ALTHOUGH the weather has been less severe during the past month than during the previous one, the temperature has rarely risen above the freezing point. The coldest day in March up to the 14th was on the 3rd, when it was 9.5° F. below zero. There have been no heavy falls of snow this month. On March 10th heavy rain fell for a few hours and this, freezing on the trees, caused them to become thickly coated with ice, and they were so weighed down that many trees had large branches broken off them. Owing to the heavy covering of snow this winter there has been practically no frost in the ground, a most unusual occurrence here.

By the time the April number of the Horticulturist is published it will be time to think about tree planting and garden making, and as it is often difficult for a fruit grower to decide on what varieties of fruit to plant, the following list of those which have been found to succeed best at the Central Experimental Farm may prove helpful to those who live where the climate is much the same as at Ottawa.

APPLES—Summer—Yellow Transparent, Red Astrachan, Duchess of Oldenburg. Sometimes the Red Astrachan is a shy bearer. Autumn—St. Lawrence, Wealthy, and Alexander. Of these, Wealthy is the most profitable if well grown. It is inclined to overbear, and the fruit should be thinned, if necessary, to increase its size.

Early Winter—McIntosh Red, Fameuse, Scarlet Pippin, Shiawassee Beauty, Wolf River.

Winter—Scott's Winter, Gano, Red Ca-

W T MACCUM
nada, Salome, Golden Russet, Pewaukee, Ben Davis. Gano resembles Ben Davis somewhat, but is much more highly colored than that variety.

PEARS—Pears do not succeed well at Ottawa. The better varieties are not hardy, and the Russian sorts, though quite hardy, are poor in quality and much affected with blight. If there can be any discrimination made among the Russian varieties, Bessemianka is probably the best to plant. Flemish Beauty appears to be the hardiest of the better pears, and has fruited at Ottawa. Clapp's Favorite, also, may succeed under very favorable conditions.

PLUMS—Neither the European nor Japanese plums are safe to plant at Ottawa as a commercial investment. Under especially favorable conditions they may bear heavy crops, occasionally, but as a rule the fruit buds are killed. Of the European plums, Early Red, Richland, and Glass Seedling have proved the hardiest, the Early Red being probably the hardiest of the three.

American plums do very well, and some of them are so fine that they are well worth growing for market, especially where the European sorts do not succeed. If a judicious selection of varieties is made, the ripening period of these plums may be extended over a month.

Seventy-six varieties have now been tested here, and the following, given in their order of ripening, have proved the best :

Cheney, Bixby, Gaylord, New Ulm, Wolf, City, Silas Wilson, Stoddard, Hawkeye, Wyant, American Eagle, Hanmer.

CHERRIES—Practically no cherries are

grown in the vicinity of Ottawa, except at the Experimental Farm, the reason being that they will not succeed when treated in the ordinary way, as they are frequently root killed. Cherries propagated on Mahaleb and Mazzard stock have been, as a rule, root killed at the Experimental Farm. Cherries grafted and budded on the native Bird or Pin cherry—*Prunus Pennsylvanica*—have succeeded well. It is doubtful if cherry trees, even grafted stocks, will live to be very old at Ottawa, but by planting them closer than is the custom in the best cherry growing districts more fruit will be gathered while the trees are in their prime. The following varieties, covering a ripening period from the last week of June to the last of July, are some of the best suited for this district :

Amarelle Hative, June Amarelle, Shadow Amarelle, Heart-shaped Weichsel, Griotte du Nord, Orel, Cerise d' Ostheim, Brusseler Braun, Koslov Morello.

GRAPES—A large number of varieties of grapes have ripened at Ottawa, but many of these are uncertain, and it is not advisable to plant more than a few kinds. The following are the best of the varieties which ripen nearly every year :

White—Green Mountain, Moore's Diamond.

Red—Moyer, Delaware, Brighton, Lindley.

Black—Moore's Early, Rogers 17, Wilder. And to these may be added Campbell's Early, should it prove as satisfactory.

RED RASPBERRIES—Marlboro, Cuthbert, Louden; also Clarke, Heebner and Sarah for home use.

BLACK CAP RASPBERRIES—Older, Hillborn, Progress.

PURPLE CAP RASPBERRIES—Shaffer, Columbian.

BLACKBERRIES—Agawam, Snyder.

RED CURRANTS—Wilder, Fay's Prolific,

and for great productiveness, though small in size, Red Dutch and Raby Castle.

WHITE CURRANTS—White Grape.

BLACK CURRANTS—Victoria Black, Success, Standard, Lee's Prolific.

GOOSEBERRIES—Downing, Red Jacket. European varieties have not done well here.

STRAWBERRIES—For general market : Clyde, Glen Mary, Williams, Beder Wood, bisexual ; and Warfield, Haverland and Buster, pistillate.

For special or home market—Marshall, William Belt, Nick Ohmer and Brandywine, bisexual ; and Greenville and Bubach, pistillate.

There are few good herbaceous perennials, with the exception of bulbs which bloom in April and the early part of May, and thus it is important to know the few there are. By referring to the Horticulturist for May, 1900, there will be found, in the Central Experimental Farm notes, a list of the best early flowering species of flowers, many of which can now be obtained from Canadian nurseries. Lists of one hundred of the best ornamental trees and shrubs, and one hundred of the best herbaceous perennials have been published at the Central Experimental Farm, which will be found very useful in making a selection to cover the whole season.

LIST OF BEST VEGETABLES FOR FARMERS.

As all the experiments which are conducted with vegetables cannot be published every year on account of want of space, a list of the varieties of all the principal kinds which have proved the most satisfactory after several years' test was published in the report for 1899 under the heading "List of best Vegetables for Farmers." This gave in a concise form much valuable information as to the best varieties to plant and must prove very helpful to those who studied it. As the annual reports are very liable to be mislaid during the year, and as one is apt

to forget the name of a variety, it has been thought advisable to again publish this list with what changes another year's experience warrants making.

Asparagus.—Conover's Colossal is the best all-round variety.

Beans.—Golden Wax or Wardwell's Kidney Wax, for early crop; Early Refugee, for medium; and Refugee or 1,000 to 1, for late crop, are the most satisfactory dwarf varieties. Southern Crease-back and Asparagus (early) and Golden Andalusia (late) are the best pole varieties.

Beets.—Egyptian Turnip, Eclipse and Bastian's Blood Turnip are three of the best varieties.

Breccole or Kale.—Dwarf Green Curled Scotch is the best.

Broccoli.—White Cape.

Brussels Sprouts.—Improved Dwarf is the most satisfactory.

Cabbage.—Early Jersey Wakefield (early), Succession (medium); Late Flat Dutch, Drumhead Savoy (late), Red Dutch (red), is a select list of the best varieties of cabbage.

Cauliflowers.—Extra Early Dwarf Erfurt and Early Snowball (early); Kronk's Perfection (medium) and Large Late Algiers are among the best.

Carrots.—Chantenay and Guerande or Oxheart are two of the best carrots, but if a good extra early sort is required, the Early Scarlet Horn can be planted with advantage. It is a small variety.

Celery.—Golden Self-Blanching, Paris Golden Yellow, Improved White Plume, White Walnut (early); London Red, Perfection Heartwell, White Triumph (late) are among the best.

Corn.—Early White Cory, Crosby's Early, Henderson's Metropolitan (early); Perry's Hybrid, Stabler's Early, Early Evergreen (medium); Scowell's Evergreen, Country Gentleman (late). In planting, the Country

Gentleman should not be omitted, as it lengthens the season very considerably, and is of fine quality.

Cucumbers.—Peerless White Spine or White Spine, Cool and Crisp, and Giant Pera are three of the most satisfactory slicing varieties. Boston Pickling is a good pickling sort.

Egg Plants.—New York Improved and Long Purple succeed best.

Lettuce.—Black Seeded Simpson, New York (curled), Tennis Ball, Salamander and Golden Queen (cabbage); Trianon and Paris Cos lettuce make a good list.

Melons, Musk.—Long Island Beauty, Hackensack and Montreal Market, of the Nutmeg type, and Surprise, Bayview, Paul Rose and Emerald Gem, of the other types, are all good.

Melons, Water.—Cole's Early, New Imperial, Ice Cream, and Phinney's Early are early water melons of excellent quality.

Onions.—Yellow Globe Danvers and Large Red Wethersfield are two of the best onions in cultivation.

Parsnips.—Hollow Crown and Dobbie's Selected are both good sorts.

Parsley.—Double Curled is as good as any.

Peppers.—Cayenne, Cardinal, Squash and Golden Dawn are four of the best.

Pease.—Gregory's Surprise, Gradus, Nott's Excelsior and Premium Gem (early) McLean's Advancer, Improved Stratagem and Heroine (medium). None of these are tall growing varieties. June (dwarf), Telephone, Veitch's Perfection (tall) (late). Nott's New Perfection is a promising second early sort, and Dwarf Telephone and Starter two promising late varieties.

Potatoes.—Extra Early: Early Ohio and Early Andes (pink), Bovee and Burpee's Extra Early (pink and white). Early: Everett and Rochester Rose (pink), Early Puritan (white). Medium: Carman No. 1

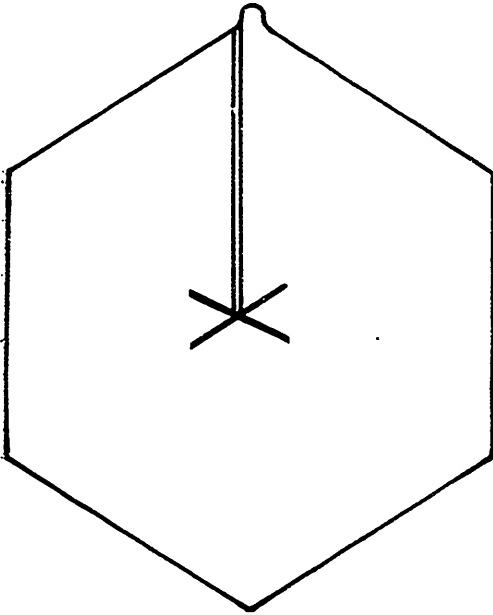


FIG. 2026. DISCS OF TARRED PAPER.

{white), Empire State (white).
Late: Late Puritan (white),
American Wonder (white),
Rural Blush (pink).

Radishes. — Early: Rosy Gem, French Breakfast, Red Rocket (red) and Icicle (white).
Late: White Strasburg, Long White Vienna. Winter: Long Black Spanish, Chinese Rose-colored.

Rhubarb. — Linnæus and Victoria are the most satisfactory.

Salsify. — Long White is the best.

Spinach. — Victoria and Thick-leaved are the best.

Squash. — Early: White Bush Scalloped and Summer Crook Neck. Late: Hubbard.

Tomatoes. — Early: Conqueror, Dwarf Champion, Canada Victor and Early Ruby. Main Crop: Brinton's

Best, Livingston's Favorite, Matchless, and Baltimore Prize Taker.

There are many varieties of this vegetable which are almost equal in excellence and productiveness. Spark's Earliana is a promising early sort tested this year.

Turnips. — Early: Extra Early Milan and Red Top Strap Leaf. Swedes: Champion Purple Top, Skirving's Improved.

The maggots which attack the roots of cauliflowers and cabbage often make these vegetables very difficult to grow, as there are few practical and satisfactory remedies. As long ago as 1889, tarred-paper cards, or discs were used as a preventative against these insects, and although they have proved very successful when properly handled, they have not come into general use in Canada. They are known as the Goff tarred-paper cards, as they were first described by Prof.

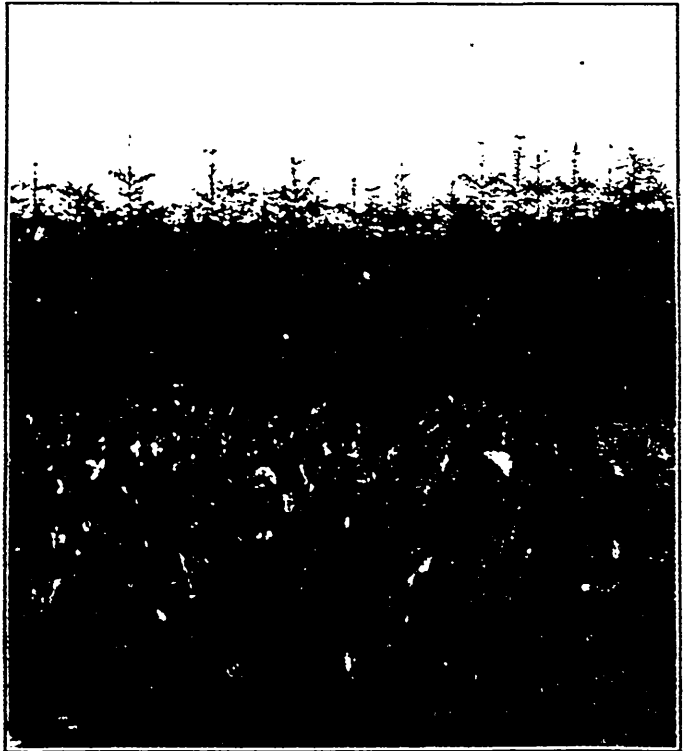


FIG. 2027. CAULIFLOWER AT CENTRAL EXPERIMENTAL FARM.
Goff tarred paper cards used. *No cards used.*

Goff, of Madison, Wis. These cards were described by Dr. Jas. Fletcher, Dominion Entomologist and Naturalist, in his annual report for 1898, and were found by him to give good satisfaction. The cards are made of a thinner grade than the ordinary tarred paper, so that they will be more flexible, are three inches in diameter, and are six-sided. There is a slit from the circumference to the centre, where there is a star-shaped cut. As soon as the plants are set out the discs should be put on. The slit to the centre permits of slipping the card on the stem of the plant, the star-like cut in the centre making it fit very closely. After this is done it is pressed flat upon the ground, the surface of the latter having been previously levelled, so that the fly can not crawl under

to lay her eggs. As the insect will, as a rule, not lay her eggs on the card, the plant is practically safe if the disc is put on at the proper time and in the right manner. If the card does not fit tightly about the stem of the plant there will be room for eggs to be deposited. It is very important to put on the discs when setting the plant, as the eggs are usually laid immediately after the plants are set. The photo showing a cauliflower plantation at the Central Experimental Farm, on part of which the discs were used, showing clearly the great advantage of using them.

W. T. MACOUN,
Horticulturist,

Central Experimental Farm,
Ottawa.

BRIEF SKETCH OF LIFE OF JAROSLAV NIEMETZ.



FIG. 2028. JAROSLAV NIEMETZ.

IN THE year 1895 we had a visit from an eminent Russian horticulturist, Mr. Jaroslav Niemetz, of Winnitza Podolie, Russia, who was sent by the Russian

Department of Agriculture to report on horticulture in Canada. We visited the orchards in the Grimsby section with him, and then we went to Toronto to visit the Industrial, a place of great interest to Mr. Niemetz, for it gave him an opportunity of comparing the fruits of Ontario with those of his own country.

Mr. Niemetz was for many years a regular paid subscriber to this journal and frequently contributed to its pages. The following outline sketch was written by his nephew, Mr. Vaclaw Niemetz, of Odessa :

“Russian fruit growers have lost in Mr. J. Niemetz one whose public addresses were always received with close attention. He was the second son of the eminent Bohemian author, B. Niemetz, and he inherited from his mother the highest qualities of heart and mind. Left early an orphan, he was unable to finish his course of study, and supported himself by topographical drawing at Prague, where his remarkable abilities in this line were observed by some admirers of

his mother. Those friends collected the necessary means and the young man went to Munich to take a course in the Academy of Fine Arts. After this he was invited to teach drawing in a rich Russian family. At the close of his sixtieth year we find him again in Odessa, earning his living by teaching, and soon after he was admitted as teacher of drawing in Real College. His moral qualities and his successful methods of teaching led to his appointment as inspector in the same college.

"About this time he purchased at Winnitza a small garden and shortly developed a passion for fruit growing, and he became such a specialist on small fruits and wine that all his friends were surprised at the vast extent of his knowledge.

"From Odessa he was removed to Rovno, in Wolinia, and finally, to his great satisfaction, to Winnitza, in Podollie. Here he was able to devote all his leisure to his beloved occupation. He procured plants, cions and seeds from many countries, such as Bohemia, France, Germany, England, Canada and the United States, and in such quantity that his garden had the appearance of an experiment station. He conducted quite extended correspondence with many eminent fruit growers of both the Eastern and Western Hemispheres, sending them

in exchange, grafts, plants and seeds, and taking considerable care to acquaint foreigners with the excellence of Russian varieties. Frequently he suffered serious personal loss and met with disappointing failures through carelessness of Customs officials, loss of precious grafts, by reason of their long journey, so that recently he had sold some trees and cions in his collection to cover some of the enormous expenses incurred in securing them.

"His work was brought to the notice of the public by the Russian Minister of Agriculture, who proposed that he be sent to America to learn the methods of fruit growing adopted there; so in 1895 he made the tour of the United States and Canada, especially the fruit-growing sections.

"After returning home he suffered very much with his eyes and was ill with inflammation of the lungs, which caused delayed the publication of his report, which did not appear until the summer of 1898 and was most highly valued by fruit growers.

"Wishing to consult a specialist about his eyes, he set out for Berlin, but at Prague he was again taken ill and died two weeks later. He was buried by the side of his mother at Prague, but his name will ever continue to live among fruit growers."

"THE CUT-LEAVED BIRCH is one of the very best trees for small lawns," writes Eben E. Rexford, in the April Ladies' Home Journal. "It is entirely hardy. It is easily transplanted and it requires as little attention as any tree I know of. And it is very attractive, with its finely cut foliage, which is always bright and healthy, no matter what the season may be. The Mountain Ash is another good tree for a small place. It is a strong, rapid grower, of utmost hardiness, fully equal to taking care of itself after it gets a start. It has very pleasing foliage, and great drooping clusters of scarlet fruit. The Japanese

Maples are lovely trees, in all stages of growth. Most varieties have delicately cut foliage, a broad, spreading habit, and the merit of rapid growth combined with great hardiness. Some varieties have slender, drooping branches, and make extremely attractive specimens for use on an open lawn where their beauty may be fully displayed.

The Negundo or Ash-leaved Maple (Box Elder) is of extremely rapid growth, and on this account many persons who are impatient of results select it for lawn use. It is a clean tree, has attractive foliage, is as hardy as an oak, and become quite a good-sized and a hardy specimen in five or six years."

THE ASPARAGUS RUST (PUCCINIA ASPARAGI, D. C.)

With stealthy pace,
With Tarquin's strides, towards his design
Moves like a ghost. —SHAKESPEARE.

ABOUT four years ago a stranger appeared on the Atlantic coast of this continent manifesting an unusually marked partiality for asparagus. Clad with invisibility he entered gardens, without arousing resistance, and proceeded quite leisurely to make himself at home while he feasted at the expense of the owner's asparagus beds. The precise date of his arrival, by what steamer he came, the port at which he landed are all unknown. Unheralded, unseen, he went from garden to garden, leaving all untouched save his favorite asparagus. At length his voracity made such havoc with the asparagus beds of some of the cultivators of this valuable esculent in New Jersey that they became alarmed lest their crop should be utterly ruined. Specimens were sent to the State Experimental Station showing the work of the devouring marauder. This was in August, 1896. The station sent out circulars, setting forth the cause of the injury, to the several Experimental Stations and to the agricultural press of the country, and found that the asparagus destroyer had just been discovered to be at his work in New England, Long Island, and the State of Delaware. In 1898 he was as far west as Michigan, and in 1899 had arrived in North Dakota. It is therefore possible, even probable, that the marauder has entered Ontario and is now "with stealthy pace moving towards his design," the ruin of our asparagus.

This destroyer is a parasitic fungus, named by botanists *Puccinia Asparagi*, one of the Rusts, a near relative of the Wheat Rust, the *Puccinia Graminis*, which in one form of its life cycle infests the berry;

but unlike it the *Asparagus Rust* completes its life cycle solely on the asparagus. That our readers may the more readily detect the presence of this rust should it appear we give a short account of its life history.

In the autumn dark lines will be found upon the stalks quite visible to the naked eye as shewn by Fig. 2029. These lines are composed of spores of this fungus, which are analogous to the seeds of flowering plants. These are the winter or final spores, formed



FIG. 2029.



FIG. 2030.

at the end of the season, in which form the plant, the fungus, passes the winter. Botanists have named them Teleuto-



FIG. 2031.

spores (Greek, teleute, the conclusion.) A part of one of these dark lines magnified twenty-five times is shewn by Fig. 2030. The black portion is composed entirely of teleutospores, which appear only as a black mass, but, when magnified 175 times, their form becomes more distinct as shewn in Fig. 2031. Two teleutospores, separated from the mass and magnified 300 times, are represented by Fig. 2032.



FIG. 2032.

When the "winter is past, the snow melted and gone, flowers appear on the earth, and the time of the singing of birds is come," then the teleutospores put forth slender filaments upon which are formed small bodies called *sporidia*; into these the contents, the protoplasm, of the teleutospores is transferred. The sporidia are very easily detached, and, borne on the wings of the wind, are carried far from the place of their birth. Such of them as happen in the course of their aerial journey to be dropped upon growing asparagus plants, when the requisite temperature and moisture are present, throw out thread-like growths called *hyphae* which enter into the stalk and there grow, ramifying into a network to which has been

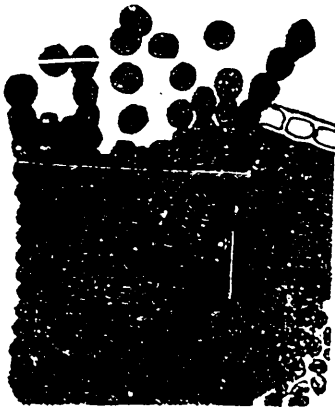


FIG. 2033.

given the distinctive appellation *mycelium*. This is the vegetative portion of the fungus, here in the tissues of the asparagus it feeds on the food which the asparagus has elaborated for its own use. When the parasites have attained a certain state of maturity the organs of reproduction appear upon the surface of their host plant, often the first intimation to the cultivator of their presence.

In the case of this Asparagus Rust we are informed that in America it usually omits the second stage, known as the acedial stage; yet it sometimes is seen upon asparagus growing in uncultivated places, and in beds not cut. It is also known as the cluster-cup form—Fig. 2033 is a representation of part of a section of the cluster-cup form of this rust magnified 175 times showing the rows of decidial spores; Fig. 2034 shows the spores after they have been taken from the cup magnified 300 times.

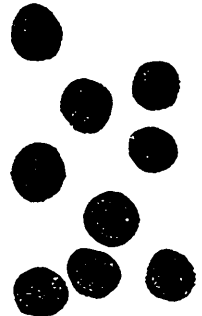


FIG. 2034.

When the cluster-cup stage is present the spores shown in Figs. 2033 and 2034 are distributed by the wind, and, becoming deposited on asparagus, penetrate the epidermis, rob the plant in the same manner as the sporidia formed from the teleutospores, and, throwing up the reproductive organs, present to the observer the uredospores, the rust, (*ureda*, Latin, the blasting of plants). When the acedial stage is omitted then the fruit, borne by the reproductive organs of the teleutospore sporidia, is the Rust, the uredospores. These as shown by Fig. 2035 as they appear to the naked eye, are seemingly mere lines on the surface of the stalk. A part of one of these lines is represented in Fig. 2036 as it appears when magnified 25 times, and in Fig. 2037 when magnified 175 times. A few of the uredospores magnified

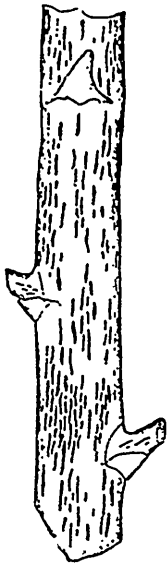


FIG. 2035.

300 times are shown by Fig. 2038.

In the Wheat Rust the uredospores are multiplied rapidly, by reproduction of the same form many times, until near the time of ripening of the grain; then the



FIG. 2036.

fungus plants, apparently aware of the necessity of providing a thicker walled spore for the winter, cease to grow uredospores and instead produces a crop of teleutospores. In the Asparagus Rust the uredospores are not multiplied by reproduction; that is, they do not become plants producing more rust, more uredospores, but, shortly after the yellow rust appears on the stalks, the black teleutospores are to be found in the same pustules, thus completing the cycle.

What this parasite accomplishes in the way of mischief is done by the power of



FIG. 2037.

numbers. Shall we count the spores to be found on a piece of asparagus stalk not more than three inches long as presented in Fig. 2035 and interpreted by Fig. 2037, and tell how many they be? Such is the host with which we have to contend now on the war path: infinitesimal in size, infinite in number, "horsed upon the sightless couriers of the air" it comes as destructive, if not as "terrible as an army with banners," and we are powerless to stay its coming. Spraying with fungicides is in this instance of doubtful utility, for such is the foliage and smoothness of the epidermis of asparagus that it is well nigh impossible for the fungicide to effect a lodgement. Nevertheless we should be able to stamp out the enemy by united action of asparagus growers in cutting off

at the ground every affected stalk, as soon as, by its change of color it is shown to be no longer of service to the plant, and burning them forthwith; for, if the teleutospores are destroyed before they are dislodged

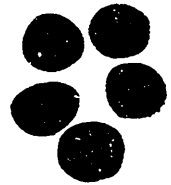


FIG. 2038.

from the stocks where they are formed, then there can be no sporidia in the spring to breed Rust. The importance of *united action* should be apparent to all, and the importance of burning the teleutospores *while yet in the stalk* will be seen when it is understood that the teleutospores produce sporidia without reference to any particular place, but do so wherever they chance to be if only there be the requisite atmospheric conditions.

The writer desires to acknowledge his indebtedness to Professor Byron D. Halsted, of the New Jersey Experiment Station, whose valuable paper on the Rusts of Horticultural Plants has been largely drawn upon, as published in the Transactions of the Massachusetts Horticultural Society for 1900, and the accompanying figures copied to illustrate this paper.

D. W. BEADLE.

207 Givens Street, Toronto.

THE DISTRIBUTION OF AGARICS.

SOME REMARKS ON THEIR EDIBILITY.

DR. Hare's paper on edible Agarics (Feb., 1901) is interesting as showing the irregularity of the distribution of species of this class of plant, than which no other is more cosmopolitan. Besides the "fairy-ring," (*M. Oreades* Bolt), there are seven other species of Marasmius not rare in this part of the province, but I have never seen a living specimen of the acrid one (*M. urens* Bull.) against which Dr. Hare cautions the collector of "fairy-rings." Prof. Peck does not report it in New York State; Mr. Morgan finds it in Ohio.

The other species which collectors of "fairy-rings" are cautioned against, *Naucoria Semi-orbicularis*, Bull., and which Dr. Hare says he has not found around Whitby, is common here. It may be seen in almost every old pasture in warm damp weather in June and is quite likely to be found near to or among "fairy-rings." Its gills are rust-colored, its cap is quite thin and its taste is suggestive of stale beech nuts.

Dr. Hare's paper is interesting also as being the first Canadian record of St. George's mushroom (*Tricholoma Gambosum* Fr.) The tricholomas are numerous in our latitude; Prof. Peck reports over fifty species in New York State, three of them being recommended as edible—indeed none of them are known to be poisonous—but his lists do not include *T. Gambosum*. It ought to be easily recognized from Dr. Hare's description. Dr. M. C. Cooke says of it that its odor is so strong that workmen employed in cleaning it out of English lawns have been obliged to desist, "overpowered by the heavy disagreeable odor." It would be interesting to discover how the species reached the Whitby College grounds. Possibly the mycelium may have

come among the roots of shrubs or plants from Europe.

In speaking of the properties of fleshy fungi, a distinction, if possible, should be made between those that are merely disagreeable or indigestible and those containing some poisonous alkaloid which enters the circulation. The same species seems to vary in the strength of its deleterious and other qualities according to soil and situation and probably age. I have received from Galt and Woodstock samples of *Lepiota naucinoides* Pk. taken from collections of that species alleged to have caused very serious nausea and vomiting. Most eaters of that species, so far as I know, have always enjoyed it. Again, certain fleshy fungi that are innocuous to most persons act, by a sort of auto-intoxication, as a poison in other stomachs. As an example of this, a woman at Aylmer was fatally poisoned a few years ago from eating *Gyromitra esculenta* Fr. while at the same time several other persons who had eaten more freely suffered no ill effects. As its name implies this species is regarded as esculent the world over and it is one that cannot be mistaken for any other. These and other instances that might be added teach the lesson that it is wise to partake sparingly at first of any new kind of mushroom or toadstool. It is better to leave them all severely alone than to eat an amanita verna for example by mistake.

In his future papers it is to be hoped that Dr. Hare will add after the account of each species such culinary notes as the one with which he closes the paragraph on the meadow mushroom. "Fairy-rings" may be cooked so as to be very delicious or they

may be brought on the table resembling so many bits of baked fowl's skin. *Armillaria mellea* Vahl., a very abundant species in Western Ontario, is recommended by some

mycophagists. I should like to see a receipt for cooking it that would produce a palatable dish.

JOHN DEARNESS.

London, 16th Feb. 1901.

CITY STREET SHADE TREES.

CITY improvement is the watch-word of the city to-day. Next to good, clean streets, nothing improves the appearance of a city and makes it more attractive than fine shade trees. Even a stately mansion looks naked without them. London is very well supplied with shade trees, but they are not all that they might have been; and there has been a liberal expenditure of denunciation as to their treatment, with a bewildering diversity of opinion as to what that should be. Much of that has arisen from a failure to distinguish between things that differ. There are a diversity of trees, and there are a diversity of purposes for which trees are planted, therefore there should be a diversity of treatment; but my subject is city shade trees exclusively.

Shade trees are not for ornament only; utility is combined. During our hot summer months shade becomes a necessity for the comfort and well being of the citizens, hence it ought to be regarded as a public duty by every one owning land facing on streets to plant trees as soon as the conditions will permit. And when once planted they should never be cut down if it can be avoided. As it takes trees a long time to attain to their best, they should be guarded with the greatest of care. An abundance of foliage in a city is well known to be conducive to the health of the residents of that city but the free circulation of pure air is a necessity for the attainment of vigorous health. All know how agreeable shade is on a hot day when travelling the street, and every one instinctively makes for it when the op-

portunity presents itself, and it matters little to the pedestrian what kind of shade it is so long as it is dense. Yet to the residents in that locality it may of the greatest consequence, as health is more important than shade, and the one is often secured at the expense of the other. If we take a glance at the treatment usually given to city street shade trees we will get a forcible illustration of how it is done.

When a treeless lot is bought and a house erected thereon, trees are planted to relieve the present nakedness and secure future shade and ornament. Our wide boulevards require two rows, and more are often planted between these and the house, as suits the fancy of the owner. The saplings grow and send out branches seven or eight feet from the ground. These are allowed to remain, and receiving the first flow of sap, grow most rapidly, which checks the growth of those above and causes the trees to grow in width more than height, which in young trees is thought to be an advantage, as it forms a fine round head, giving more shade and that sooner. But trees if they live, will grow and keep growing, and in time their lower branches become thicker than the trunk of the tree above them, the foliage becomes more dense and closer to the ground. No air circulates beneath them. Sun and air always excluded, the soil becomes cold and sour, so that grass cannot grow, and is given over to moss, moulds and fungus. The house is affected by its surroundings, and the health of its inmates suffer. Attention is directed to the cause, when it is dis-

covered that the trees have become a nuisance and must be dealt with accordingly. So the large lower branches have to be cut off, and the trunks thereby disfigured for all their future life and their death hastened. The tops have been dwarfed and deformed, and good shade, combined with the free circulation secured, has been postponed for years whilst they and beauty of form have parted company forever. That is but a picture drawn from what is taking place around us.

The future of trees, their suitability for and their effect on the situation should be taken into consideration at the time of their planting, and kept in mind for their treatment after. To obtain the best effect, the trees on each street should be all of one kind, so as to secure regularity in form and manner of growth. Planted at regular distances apart, and no branches allowed to remain permanently on the trees until a stem of eighteen feet from the ground has been secured. This requires yearly attention, yet will give but little labor, as the branches removed are small and will leave no scar to mar the trunk. The effect of such treatment is to cause the trees to grow rapidly tall, and when once a stem of proper height has been attained a spreading top will soon follow. When the branches meet and begin to crowd, the growth will be forced to the open sides. Then there would be luxuriant shade for the pedestrian, whilst the roadway also will receive the benefit.

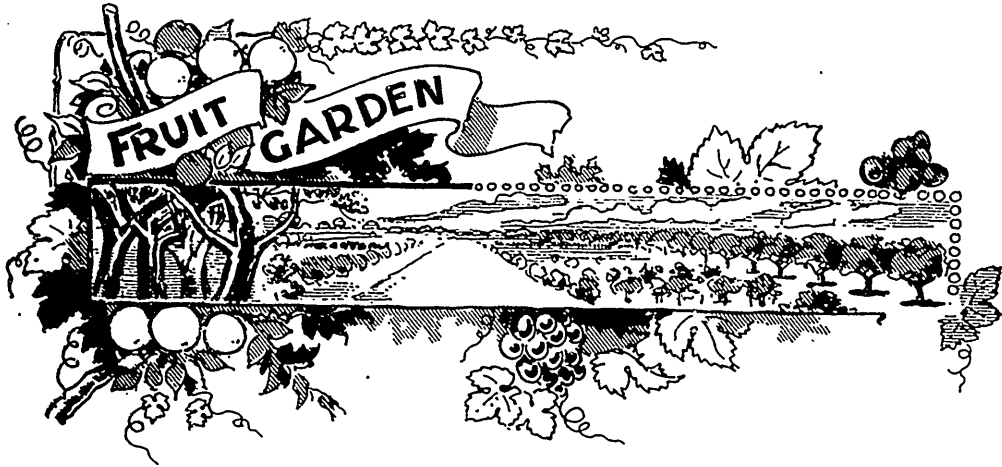
Now let us consider what the reward would be of such a course of care and forethought. Rows of trees with smooth and

stately trunks, themselves a pleasure to look at, bearing aloft their leaf-laden branches, which secures the much-desired protection from the fierce rays of the summer's sun; and also secures the delightful and health-giving sensation of unobstructed currents of fresh air circulating beneath. Vaulted corridors roofed with verdure, and a vista of charming perspective as far as the eye can reach, an inducement for the lively choristers of the forest to take up their abode and give animation to the scene—a consummation all should help to secure and preserve. The busy workers in the city cannot readily obtain the opportunity to enjoy the delights of the country, but in this way these might be in a measure produced in the city for the benefit and enjoyment of all.

But there are more than merely physical gratifications to be obtained from such surroundings. There are mental and moral improvements made possible to every one within their influence. Nothing could more powerfully contribute to the cultivation of the artistic sentiment, stimulate the love of the beautiful in nature, expand the mind, elevate the thoughts and refine the feelings of all that is susceptible. If such a course as indicated had been adopted 25 or 30 years ago, and consistently adhered to, London, which is noted for its abundance of excellent shade trees, would have good cause to be much more gratified with them than it can be, and call forth from visitors an acknowledgment that it was indeed a city pre-eminent for its magnificent avenues—*London Free Press*.

GET THE BEST SHRUBS FOR THE LAWN—
In selecting shrubs for the lawn, quality should be considered first of all. There cannot be many used on small grounds, therefore those selected should be the best. Let me say right here that it is a serious mistake to scatter shrubs over the surface of a lawn. To do so detracts from its dignity. A lawn

as a lawn, should be given a chance to assert itself, and stand on its own merits. If it is broken up by shrubbery it loses its individuality, and is no longer a lawn in the best sense of the word. Shrubs should therefore be kept to the rear of it, or to each side, and the lawn be left perfectly clear.—*April Ladies' Home Journal*.



NOTES ON STRAWBERRIES UNDER TEST AT THE ONTARIO AGRICULTURAL COLLEGE.

TWO hundred and sixty varieties of strawberries have been under test here during the past five years. Careful notes have been taken upon the habit of the plants and the character of the fruit of each variety, and every picking has been carefully weighed and recorded. This has required a great deal of attention and careful work, but it has put us in the position of knowing definitely just what each variety has done, and we can speak with some assurance upon the relative values of varieties which have been subjected to a test of this kind for five years in succession.

In arriving at a conclusion as to which are really the best varieties of strawberries there are quite a number of points besides productiveness to be taken into consideration. With reference to the plant we must take into account its vigor and freedom from disease, its ability to reproduce itself by good strong runners, its ability to fertilize its own blossoms or those of other varieties, and also its season of bloom and fruiting. With reference to the qualities of the fruit, note must be taken of the size, shape, smoothness, and color of the berries, and also of the color, firmness and flavor of

the flesh. Flavor is one of the least variable qualities in the strawberry, and is usually least considered. The qualities most sought in a market variety are large size, smooth round shape, and firmness of flesh. The color may vary from a bright red to a dark crimson, but a dark rich color, enlivened by bright yellow seeds and a varnished appearance makes a variety not only attractive in the market but the most desirable for canning.

Notwithstanding all the many varieties that have been tried we are still looking for the ideal strawberry. There are among those tried many excellent varieties, but even the best are wanting in one or more desirable qualities. In the brief summary here necessary we can only name a few of the leading varieties, mentioning their most prominent good qualities and defects.

In making a selection of varieties, either for home use or market, we do not think it is well for a grower to restrict himself to less than half a dozen kinds. He is then more certain of having both quantity and quality, no matter what the soil or season. Such a collection should include not only a few of the best midseason varieties, which



FIG. 2039. STRAWBERRY EXPERIMENTAL PLOT, O. A. C., GUELPH.

are usually the most productive, but a few of the best early and late kinds, that the fruiting season may be extended as much as possible.

Among the early varieties some of the most desirable kinds are Sadie, Anna Kennedy, and Van Deman.

Van Deman is in many respects an ideal berry. It is very early, of uniformly good size, smooth round shape, firm flesh, and a very handsome dark crimson color, with bright yellow seeds and a varnished appearance. The plant, however, lacks vigor and requires a moist soil and favorable season to do its best. For three years in succession this proved to be our most productive very early variety, but during the last two seasons it has been surpassed by Sadie and Anna Kennedy. It is a perfect flowered

variety and an excellent pollenizer for other early pistillates.

Sadie is a newer variety that has made an excellent record for the three seasons it has been under test. It excels in vigor and productiveness, just those qualities in which Van Deman is lacking. It is also very early and a good pollenizer, but the berries are rather small, although shapely, firm, and of a good color.

Anna Kennedy is also a new variety producing firm fleshed, good sized, very handsome berries of a dark crimson color. All it requires is the productiveness of Sadie to make it an ideal variety. It is a pistillate variety requiring an early blooming bisexual variety, such as Sadie or Van Deman near at hand to furnish the necessary pollen.

When both quantity and quality of fruit

are considered we would mention Clyde, Irene, Warfield, Tennessee Prolific, and Jucunda Improved among the best mid-season varieties.

Clyde comes nearest to the ideal variety in everything but the color of the fruit, which is hardly dark enough. For the three years Clyde has been fruited here it easily ranks first for productiveness. The plant is vigorous and healthy, the fruit large, shapely and moderately firm.

Irene has now fruited with us for three years, and it has proven to be well worthy of a place in any collection. The plant is vigorous and healthy and makes plenty of runners. The blossoms are pistillate. The fruit is of fairly good size, shapely, and of a dark crimson color and handsome appearance. Last year this variety ranked first for total yield, but on an average of the three years' crop it does not equal Clyde.

Warfield is an old standard that has had its ups and downs. In showery seasons it makes a grand yield, but in times of drought its leaves curl up and the plants wither in the sun. It is an excessive plant maker, and throws out too many runners. The flowers are pistillate, the fruit is of medium

size, shapely, firm, and of the dark rich color so much desired for canning.

Tennessee Prolific is a vigorous grower and makes plenty of plants. The flowers are perfect and the fruit is large, shapely, firm, and of a bright color. This is a reliable variety that has on the whole made a good record, ranking near the head of the list among those varieties that have been fruited for five years in succession.

Jucunda Improved.—If yields only were considered this variety would hardly appear in so short a list, although on the average of five years' crop it has made a very fair showing. In everything but yield, however, it ranks among the best. The plants are healthy and make just runners enough to fill the rows nicely. The flowers are perfect, and the fruit is large, shapely, firm, of a dark crimson color and very attractive.

Among the late varieties Saunders is still entitled to first place. In both plant and fruit it possesses as many of the good qualities, and as few of the defects, as any other variety on the list. The plants are healthy and vigorous and the flowers perfect. The berries are large, well shaped, firm, and of good color.

O. A. C., Guelph.

H. L. HURT.

SOME OF THE NEWER FRUITS.



ABOUT two years since I reported on some new fruits. Two more years of experience have not much changed my opinions.

I see no reason why Dwarf Juneberries should not be found in every garden. They are entirely hardy, and flourish with less cultivation than any fruit that I know of. A mass of white bloom in May a sure crop of sweet fruit at the end of June. The fruit resembles huckleberries, and is just suited to mix with sour red currants in canning or cooking otherwise. Most persons would prefer a few currants with the Juneberries as the latter have no acidity. They are in

size about the same as black currants. Many like them raw; some object to them.

Japan wineberries froze down in the hard winter of 1899, but they promptly recovered and gave a moderate crop of fruit in 1900. They have a peculiar flavor, more acid than red raspberries. The fruit is smaller than red raspberries, and very bright and beautiful. We have planted a row of them for home use. We like them.

Japan plums have a future in front of them.

Ogan, a round white plum, ripens in July and drops promptly to the ground. Answers to cook, but is not very good.

Abundance is not a success with us. Fruit

overbears, and much of it is small and fails to properly mature.

Burbank usually bears immense crops of good sized fruit which it perfects. The tree at the same time makes rampant growths. It is a mid-season variety. The drooping, sprawling growth of the tree is very inconvenient. The quality of the fruit is equal to that of the average European plum.

Wickson is a larger late variety, which may be an acquisition. The fruit often drops before ripening, but some of it is held till quite late.

I have another variety that ripens and holds its beautiful delicious fruit quite late. Fruit varies much in size, and is covered

with bright carmine dots and a white bloom. Quality very good, but there is a flavor in the skin of Japan plums that is rather objectionable. Curculios also fail to flourish in these plums.

Satsuma is a mid-season Japan plum which, externally and internally, resembles a blood beet; fruit is sour, but may in time be in demand for cooking purposes. Japan plums seem to be about as hardy as the European varieties.

The winter of '98-'99 killed some of both varieties where the ground was kept clean. A cover crop or some kind of mulch would in this climate save both kinds.

E. MORDEN.

Niagara Falls, South, March, 1901.

SEASONABLE ORCHARD WORK.

I THINK it the duty of every fruit grower to attend to the needs of his orchard at once; for if neglected now, ten chances to one if the work will be done so effectually after spring work begins. In our own orchard I have no evil results from pruning trees the latter part of March, but if I had only a few trees I would prefer to prune a month later. Then there is the manuring and top-dressing of the orchard that can be accomplished better now than at any future time. There is also a better opportunity of securing the nests of the caterpillars, which are on the twigs or small branches, for they are readily seen before the buds swell; also the cutting out of dead or decayed branches, scraping old and rough bark, thereby destroying hundreds of moths that have made the rough bark their winter quarters.

The fruit grower who is up to the times must attend to these matters promptly if he intends to have a paying crop of fruit. He will also see to it that his spraying apparatus is in perfect working order, and if not in possession of a good spray pump

he will secure one without waiting till half of his crop is injured with insects, and then conclude that spraying is no use. My experiences tell me that two sprayings before the blossoms open is better than four after, except for fungi alone, and even then it is most beneficial.

Owing to the low price of fruit last fall, some growers will be discouraged, and thereby neglect to care for their trees; but let such remember that for strictly first-class apples there was no time, after the fruit was gathered, when a good paying price could not be obtained, and I am sure no reasonable grower would complain at the prices at the present time. I am shipping some apples this week at \$3.00 per bbl., and a full car load left our station last week for Winnipeg at \$2.80 per barrel.

My advice to fruit growers is, keep up the fertility of your orchards; keep them well pruned; keep them well sprayed and free from insects, and your orchards will well reward your efforts.

Whitby.

R. L. HUGGARD.

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

THE ORIGINAL HOME OF THE SAN JOSE SCALE.



ANY attempts have been made in recent years to fix the original home of the San José Scale. California, China and Japan, each in turn, have been honored in this connection, but no evidence of a definite trustworthy nature has been produced to determine for a certainty the nativity of the Scale.

The real object of all such investigations was to ascertain what are the natural enemies which kept the Scale in check in its native home, for it must be evident that some influence must be at work there, holding in check this most prolific insect, which has spread so rapidly in America when free from its usual enemies. Many are of the opinion that if these enemies could be discovered it might be possible to import them, and propagate them among the scale infested orchards of this country.

While it is true that very few successful experiments in the importation of the enemies of injurious insects have been carried out, yet there is no reason why we should become discouraged in the case of the San José Scale. Much has been learned by the failures regarding the conditions which are necessary for the successful importation of predaceous insects. In the first place, the climate of the native country of the predaceous or parasitic forms should not differ very much from that of the country to which they are taken; and in the second place, the parasitic forms should find insects in their new country with which they are already acquainted. To induce foreign parasites, etc., to prey upon insects altogether unfamiliar to them would require an adjustment of conditions which is usually only possible in nature after a long period of time. The success of the *Vedalia* introduction into Cal-

ifornia in checking the *Icerya* or *Cottony Cushion Scale* resulted from the fact that the *Vedalia* found the identical species of scale with which it was quite familiar in Australia.

Last summer, Mr. Krwana, a Japanese student of Entomology in Stanford University, California, returned to Japan for the purpose of collecting and studying the scale insects of his native land. He found the San José Scale widely distributed in most of the islands, in the interior as well as along the coast. He observed, moreover, that it was doing comparatively little injury in the orchards, where it was found on plum, pear, apple, Japanese quince, currant and willow.

Several enemies of the scale were quite common, among which were three species of lady-beetles, a chalcid fly, and the larva of a moth; and it is the opinion of Mr. Krwana that these are the agents which keep the scale in check. Curiously enough the scale was not found on any wild, uncultivated tree or shrub, an observation which may be explained by the fact that orchard cultivation has been in existence in Japan for many centuries; and that the pest has taken more kindly to the cultivated trees and shrubs than to the uncultivated wild forms. Subsequent examinations, however, may discover the scale on the wild trees.

It is to be hoped that experiments in the importation of these enemies of the scale may be tried, and that another brilliant success may be chronicled in the annals of economic entomology.

SPRAYING.

Experience has shown very conclusively that the great secret of success in spraying is spraying early, spraying several times during the season, spraying every year, and spraying intelligently. When we know that

some insects pass the winter in the adult stage, and are ready at the earliest opportunity to begin egg-laying, or that others winter over as half-grown caterpillars, ready to begin eating the tender parts of the young buds with the first glimpse of spring weather, we can readily understand the importance of early spraying with paris green. But early spraying is of even greater importance in preventing the growth of fungi which reproduce by *spores*. Frequently winter spores are formed in the fall, and live over in the fields, and in the crevices of the bark or in other places on the trees. When the fruit and leaves form in the spring and summer, the spores are often blown on them, and soon give rise to diseased conditions. Early spraying with copper sulphate (3 lbs. to 40 gallons of water) while the trees are dormant and with Bordeaux mixture when the leaves are unfolding, will kill many of the wintering spores. It is necessary to spray several times during the season, for insect pests are continually appearing and no month of the summer is free from their attacks. Moreover, some leaves develop much later than others on the same tree, and escape the first spraying with copper sulphate or Bordeaux mixture. These leaves should be sprayed to prevent spores developing on them. The fruit would also escape the first spraying, hence the necessity for spraying them to prevent the attacks of fungi.

Many owners of orchards are probably asking themselves the question, "I sprayed my orchard well last year, shall I spray it

again this year?" There should be no hesitation whatever in this matter. Spray every year, for it is impossible to get rid of fungi entirely, and the season may be very favorable for their spread and development.

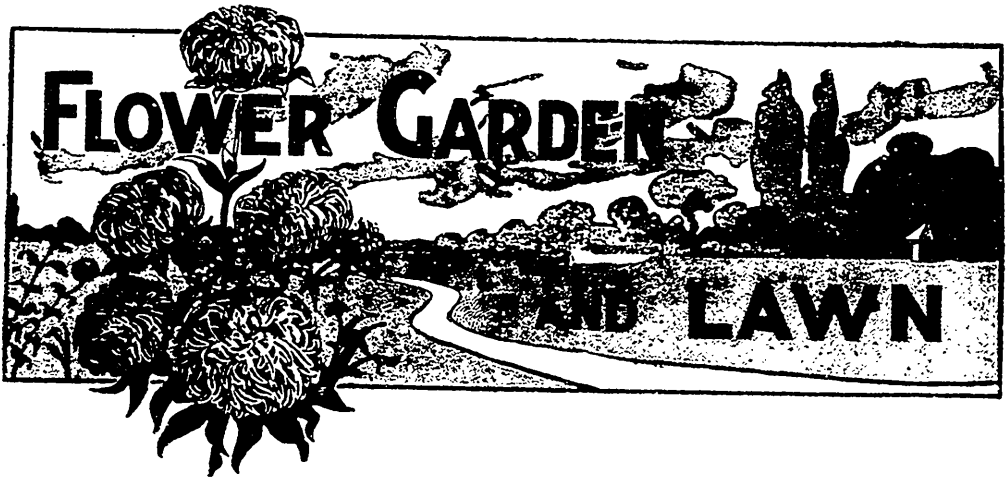
Many people spray who do not know the reason why they are spraying. They think that fungous diseases may be cured by the application of Bordeaux or some other fungicide at any stage of the disease, whereas the real purpose of spraying is to prevent the germination of the fungous spores that have been blown upon the leaves, branches and fruit. Masseur says: "The old maxim, 'prevention is better than cure' embodies the keynote to success in combating plant diseases." When once the spore has germinated and the thread of the fungus has obtained an entrance into the interior of the leaf, it is impossible to cure the disease, but it is possible to prevent the disease from spreading to other plants, by killing the spores produced by the fungus.

It will be seen how important it is to spray intelligently. The operator must study the weather conditions, and watch carefully the effect of rains on the previous spraying. He must note the time to spray with ammonia-copper carbonate instead of Bordeaux so as not to spot the fruit. He must suit the solution to the plant so as not to injure tender forms; and he must study the various kinds of spray pumps on the market, secure the best, make the solution properly, and spray thoroughly.

W. LOCHHEAD.

WATER-LILIES ARE EASILY GROWN.— All that is needed to grow water-lilies is a tub, sunlight from six to eight hours a day, some rich garden soil, and a little water. The easiest way to grow them is from seed, and the prettiest varieties are the African, or Zanzibar; they are purple, blue and red. To sow them take a common bowl and half fill with finely sifted soil packed down level and

hard. On the surface scatter the seed evenly and cover with not over a quarter of an inch of fine sand; then very gently fill the bowl with water so as not to disturb nor wash away the sand. Place where the water will be kept at a temperature of about eighty degrees. In two weeks they will be ready for transplanting. — *April Ladies' Home Journal*.



TIMELY TOPICS FOR THE AMATEUR.—XIV.

GARDEN ANNUALS AND BIENNIALS—
 The many beautiful species and varieties of these two classes of plants are more particularly suited perhaps for the amateur flower-lover than for the commercial or professional florist. With the exception of a few that may be termed staple or standard kinds, such as sweet peas, asters, mignonette, zinnias, phlox drummondii, nasturtium, antirrhinum, and perhaps a few stocks and cosmos, very few of the remaining varieties are of sufficient merit or attractiveness to warrant their being grown to furnish a supply of cut flowers. The latter feature is however, as a rule, a secondary consideration with amateurs, as the bright and pleasing appearance of the flower garden or lawn is usually their first consideration.

The list of annuals, etc., mentioned in the February number of this journal was selected mainly with a view of furnishing varieties of easy culture, and that would also give a successive supply of cut flowers, as well as to assist in brightening up the flower garden in summer. One omission in the list cannot however be overlooked, viz., that of the sweet pea. The value of the sweet pea, especially for cut-flower purposes, can hard-

ly be over-estimated, as so many beautiful varieties and types of these sweet-scented favorites can be so easily obtained, and the fact that cutting the flowers regularly and not allowing any of them to seed, not only adds to their effectiveness as decorative plants, but also prolongs considerably their period of flowering.

One objectionable feature with annuals is, that unless early sowings are made either in the greenhouse, hotbed, or perhaps in a window, the flower border is almost bare and devoid of foliage and flower during the spring and the greater part of the summer. This plan of raising garden annuals under glass is a comparatively difficult and delicate operation with most of the varieties. There are few, if any professional gardeners or florists, but will frankly acknowledge that a collection of early garden annuals are more difficult to succeed with, if started under glass, than a collection of orchids or exotic plants. Unless the seedling plants are attended to very carefully, more especially as regards watering and transplanting them, partial or total failure is sure to be the result. The most critical period perhaps is when the young plants are transferred from the almost tropical climate of a greenhouse



FIG. 2043. BERMUDA EASTER LILIES.

or hotbed, to the uncertain and variable temperature usually experienced out of doors in spring and early summer. Careful watering and shading the young plants from the hot sun for a few hours at mid-day, is generally necessary for a day or two after bringing them from the greenhouse or hotbed. A little protection on cold nights is also advisable for a time, until the plants have become accustomed to the changed condition of their surroundings. This hardening-off process as it is termed, is not however as a rule quite as difficult with plants raised in pots in a window, as it is with those raised in a greenhouse or hotbed.

The most natural, and probably the most certain methods to grow annuals is either to sow the seed in the open border, or to sow them in a cold-frame or seed bed specially prepared for them out-of-doors. The latter method is probably the best, as the young seedlings can be better attended to in the first stages of their growth in a small frame, than if sown in the open ground. A few varieties such as stocks, mignonette and nasturtiums should be sown in pots, a few seeds in each pot, and grown on in these until ready for transplanting into the border, as these varieties do not transplant as successfully as many others if the roots are disturbed in transplanting them. Castor oil beans (*Ricinus*) should be planted singly in three inch pots. These latter succeed best started in a warm place either in a hotbed or greenhouse, or in the window. Early in June is soon enough to plant the *ricinus* out of doors, and even later than that in late seasons, as a slight chill ruins these tender plants very quickly.

The cold frame mentioned for raising annuals can be easily made by nailing some pieces of 1 x 12 inch board together, so as to make a frame of the required size. Quite a quantity of seedling annuals can be raised in a very small space in this manner, as a bed two or three feet square will provide an

ample supply of plants for an ordinary sized garden. A sash is not necessary except perhaps on very cold nights or days. Some slats laid across the frame and covered with thick matting in cold stormy weather will answer almost as well as a sash, and is very much safer. Unless the sash is carefully shaded and either lifted off or tilted up on hot sunny days, it is a source of danger. Neglect in attending to shading and ventilating frames where sash is used, has accounted for the sudden destruction of many promising batches of young seedling plants.

About the middle or end of April, or perhaps early in May will be soon enough—if the season is late—to sow most annuals and biennials out-of-doors as before mentioned.

The frame should be placed in a warm, sheltered sunny position of the border, and about six inches of light rich loamy soil put into it. Banking up the frame on the outside with manure or soil will not only assist in keeping out the cold, but also prevent the soil inside from drying out around the edges. As soon as the soil is sufficiently dry and friable to work easily without clogging, the seed can be sown. Drills of the required depth and about two inches apart will be found to be the most convenient for sowing the seed in.

Aster, zinnia, stock, and seeds of a similar size to these should be sown $\frac{1}{4}$ of an inch deep, whilst smaller seeds such as *campanula media*, *antirrhinum*, etc., should only be barely covered with soil. Use a watering pot having a very fine rose or sprinkler for watering these small seeds so as to prevent rinsing.

The pots of stock and nasturtium seeds, should be plunged up to the rim in the soil. This plunging process will prevent them from drying out too rapidly, a condition that is dangerous to the young seedlings; and one that is hard to avoid unless the pots are plunged so as to prevent it. Mignonette is best sown in the open ground where it is

to flower, unless sown very early in pots in the house or greenhouse.

The seedlings should be planted out from the frame as soon as they are large enough to handle. Choose dull showery weather if possible for this operation. Water and shade the plants as required for a few days. For shading, a few pieces of shingle or slats of wood placed so as to break the rays of the sun for an hour or two at mid-day, is better than shading the plants too closely with a close covering. When once well established the plants will require very little attention beyond watering in very dry weather. Even when sown in the open ground, young seedling annuals will benefit by being partially shaded for a few hours during the hottest part of the day. The most critical period with seedlings is just when the seeds are germinating. Allowing the seed to become dry, and a few hours' exposure to the hot sun at this time will prove fatal to most young seedling plants. Water should be given early in the morning before the sun is very powerful.

Among biennials there are only a few species really adapted for successful culture in our gardens; hollyhocks and the various double and single types of the campanula media being about the most remunerative and attractive of this class of plants. Even these are difficult to bring through the winter in many localities, unless well protected during very severe weather, and early in the spring when the snow has melted, leaving the plants bare and exposed to severe frosts at night, and the blistering sun in the day time. The campanula media will however come through the winter successfully some seasons without any protection whatever. The spike of bloom as represented in the March number of journal was taken from a plant that had not had any artificial protection during the preceding winter. The position it was growing in was however fairly well sheltered from the west by a

cedar hedge. Even if only a few spikes of the uniquely shaped flowers of this campanula are obtained, they well repay any extra care and attention bestowed on their culture.

The antirrhinum or snap-dragons are generally classed and treated as biennials. It is impossible however to winter these over in our gardens without the aid of a sash or frame, even this latter method is risky. They succeed splendidly, however, treated as annuals, as seed sown in March or even in April will produce plants that will flower as early as July or August, and continue flowering until early winter. Some of the newer types of antirrhinums, more especially the dwarf varieties, are very pretty and useful, not only to furnish a supply of cut flowers, but their dwarf and compact style of growth and their profuse and continuous habit of flowering, recommend them highly as decorative plants for the flower-garden or mixed border.

Seeds of the hollyhock and the campanula media can be sown either in doors in pots or boxes early in the spring or in the frame, or open border later on. Early sown plants of these should be planted out in May or June in the open border where the plants are to flower. Seed sown in July in the open border, and the plants thinned out if necessary, and transplanted early in September, will often come through the winter better than plants raised earlier from seed sown earlier.

As auxiliaries and extras in the flower garden or mixed border, both for decorative purposes and cut flowers, annuals and biennials cannot well be dispensed with. Their many and varied forms and types, as well as the beautiful shades and tints of their flowers, all of which may develop some new and unexpected feature, make them doubly attractive to the amateur flower-lover. The fact that by successive sowings many varieties can be had in flower in the hot months of summer and in early autumn, when flow-

ers are scarce, makes them of value also to the commercial florist. But for the busy or inexperienced plant-lover, where little care and attention can be given their culture, or where they are depended upon entirely to

beautify the garden or to produce a supply of cut flowers, annuals and biennials have often proved to be only a source of disappointment and failure.

Hamilton.

W. HUNT.

MAGNOLIA STELLATA.



FIG. 2041a. MAGNOLIA STELLATA.

THE above is a picture of Hall's Japan Magnolia (*Halleana*) taken last spring during blossoming season. It is of dwarf habit and produces its pure white flowers, that are semi-double and fragrant, before the leaves appear. It is a wonderful little shrub and was obtained eight years ago from the Arnold Arboretum in Boston, and is now a better specimen, I am told, than can be found in those gardens, which is favorable to its hardiness in our

climate. During the first years after planting, a barrel without top or bottom, was placed over it after hard frosts in autumn, then, as it grew larger, a four-sided enclosure was built around it and last year it was only sheltered on the south and west. It was decided the past winter to leave it unprotected and at this date (the end of February) it is still covered with snow. But I rather doubt the good result of such a stern effort at acclimating, for it may end disastrously when the spring sunshine comes hot and strong, while yet the sap is frozen.

The idea of gradually getting a plant acclimatized seems feasible, but when a severe winter upsets all our theories, and the subject of our experiment becomes but

a lifeless stick, we regret the test. Be that as it may in the future, one thing is sure, that among early flowering shrubs none have such a regal effect as *Magnolia Stellata*. Place it as this one stands, in a bed of glowing early tulips that glisten and shade like a rainbow, while it is white and still, full of fragrant blossoms and for beauty without a peer.

ANNIE L. JACK.

Chatauguay Basin, Province of Quebec.



FIG. 2041. AZALEA INDICA.

GREENHOUSE, WINDOW AND GARDEN.—IV.

APRIIL will be a busy month in the greenhouse. Potting late struck cuttings from the cutting bed, and potting earlier struck plants of coleus, ageratum and bedding plants generally into larger pots, will have to be attended to.

Fancy caladium corms or bulbs, and tuberous begonias that were placed in sand in the cutting bed last month will soon require to be potted. When the new roots are about an inch long is about the time to pot them. Pot the tuberous begonias into well drained six or seven inch pots, as they are difficult to re-pot. The caladiums can be potted into smaller pots as they are not so difficult to re-pot later on.

Young chrysanthemums must be potted into larger pots. Allowing the roots of

these to become pot-bound not only checks growth, but is an inducement for disease, especially "rust," to develop itself. A few cuttings of chrysanthus can still be started for planting thickly on the benches or for growing in pots in the greenhouse.

Carnations can be planted out in the open border as soon as the weather is suitable, which is often not until the end of the month or early in May perhaps. Carnations are to a certain extent hardy, but plants that have been grown under glass must not be exposed to severe frosts unless they have been well hardened before planting them out. Pinch the tips of the growth of the carnations out to induce a bushy, sturdy growth.

Pots of violets that have done flowering can be divided and repotted into 4 inch pots.

The pots can be plunged outside toward the end of the month in a partially shaded position in the garden.

Seedling plants of gloxinia, cyclamen, primula and tuberous begonias can be transferred from the seed pans or pots into shallow boxes, as soon as they are large enough to handle nicely.

Seeds of early annuals and biennials should be transplanted into pots or boxes and placed out-of-doors as soon as the weather is at all suitable. A little shade and protection on hot days and cold nights will be necessary for these for a short time when first put outside. The plants should be well rooted if possible in the boxes, before being put out.

Cuttings and young plants of summer flowering begonias will require potting into 2½ inch pots as soon as rooted. One half loam, and one part each of sand and leaf soil suits these begonias very well.

Plants of azalea indica will require syringing regularly every morning on fine days. Some of the late flowering varieties may perhaps yet be showing some bloom, and care must be taken not to syringe these very heavily.

Lilium Harrisii seems to be grown in less quantities year by year. Immature and diseased bulbs are largely accountable for non-success of recent years with these useful Easter plants.

Roses in pots, or planted on benches, will require plenty of water at the roots. Syringing and fumigating must not be neglected, as insect pests develop very rapidly at this season of the year.

Ventilation must be given freely on hot sunny days. Opening the ventilators as early in the morning as possible consistent with safety, will prevent "fogging" or "damping-off" of the flowers of geraniums, pelargoniums, and other plants.

Dampen the floors early in the afternoon and close the ventilators before sun-down.

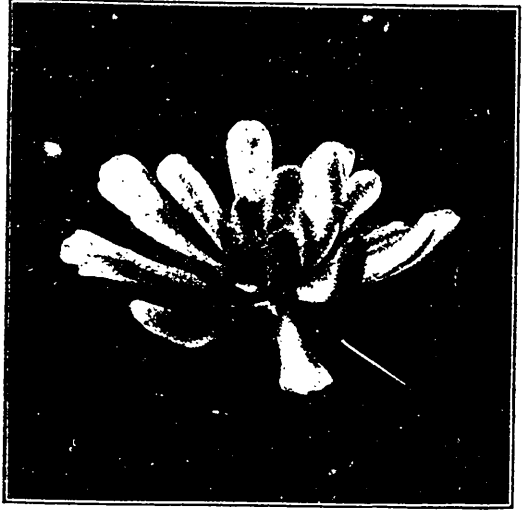


FIG. 2042. ECHEVERIA SECUNDA GLAUCA VAR.

THE WINDOW.—All plants such as palms, dracenas or cordylines and foliage begonias, that require repotting, can be potted in April or May, if proper potting soil can be obtained. Unless suitable soil that is dry and in good condition can be obtained, the plants had better not be potted until later.

Annuals that were sown early will perhaps require thinning out; asters, zinnias, dianthus, gaillardia and phlox, transplant very easily. Harden these plants off gradually by placing them outside on fine days for a few hours.

Several kinds of the echeverias make pretty window plants and are easy to grow.

A mixture of rather sandy potting soil suits these plants very well. In summer most of the varieties can be plunged, pot and all, in the garden from June until September, where they will almost shift for themselves. *Echeveria metallica* is an easy variety to grow and, if treated as mentioned, will often develop a flower-spike that produces a number of small, bright red blossoms, that will brighten up the window during a great part of the winter.

The variegated echeveria, sec. gl.

variegata, is a very prettily marked dwarf-growing variety. The plant as shown in the cut is only about four inches in height and a little broader, but its prettily marked, fleshy, pale green leaves that are delicately striped and shaded with white and pink, makes this diminutive type of these plants very conspicuous and pretty when placed so as to contrast with plants having different colored foliage. This variety succeeds best kept in the window all the time, and must not be potted very frequently or given too much water, especially in winter.

Fuchsias must be syringed once or twice a week to keep down red spider.

Cuttings of geraniums, fuchsias, lantanas and similar plants will strike now if placed in sand. Care must be taken not to keep cuttings continually soddened with water. It is better to place them a little in the shade if they wilt, than to deluge them with water all the time to keep them from drooping.

THE GARDEN.—The bulb beds can usually be uncovered about the middle of the month without any fear of injury from frosts to their occupants.

Shrubs and all tender plants, that have been covered up or protected during the winter, can have their winter covering removed by degrees. Sudden exposure to sun and air is sometimes detrimental to many delicate plants, after being closely covered during the winter.

All rubbish and leaves should be raked up and burned. The ashes will make a good fertilizer for use in the fruit, flower or vegetable garden.

Sow sweet peas in drills three inches deep as soon as the ground can be worked. Early sowings of these usually give the best results.

Give the herbaceous border and all small fruits except strawberries a coat of rotten manure; this should be forked under the ground as soon as convenient. Strawberry

plants should have their winter covering removed.

Hardy rose bushes should be pruned at once, if not already done. These should also have a coat of manure or some bone-dust forked in around them, before growth commences.

In the vegetable garden the asparagus bed will require the first attention. Fork it carefully over as soon as possible, and give it a good dressing of salt and nitrate of soda, as recommended at page 32 in the January number of Journal.

Plant artichokes as soon as you can, after the frost is out of the ground. Winter, uncut sets of these nutritious, but little used, vegetables must be planted to secure a crop. Plant the sets four inches deep, and eighteen inches apart in the rows. The rows should be about three feet apart.

If early cabbage and cauliflower plants have been grown, they can be planted out about the end of the month, or early in May.

A sowing of early and late varieties of peas should be made as soon as the frost is out of the ground. By sowing early and late varieties together, successive pickings are secured.

Parsnips and onions should be sown as soon as the soil can be raked without clogging the rake. These cannot be sown too early if the soil is in proper condition. Any parsnips that were left in the ground during the winter should be dug up and placed in the cellar. These will be found to be in splendid condition for the table, after being subjected to a winter's frost, and are far nicer flavored than those dug in the fall, besides being more wholesome.

A row or two of early carrots and beets should be sown, the main crop of these should be left a week or two later.

Parsley seed is also best sown as early as possible. Sow it thickly in drills about half or three-quarters of an inch deep. The

ground where it is sown should be raked level, and the soil pulverized fine. Parsley seed is very slow in germinating, taking three or four weeks before it shows any sign of growth, unless the weather is very favorable.

A row or two of lettuce seed should be sown as soon as the ground can be worked nicely. The early Ohio and the Hanson are two good varieties.

A packet of leek seed sown early will give quite a number of plants for planting out later on. Leek seed should be sown in shallow drills about three-quarters of an inch deep. Later on, when the plants are four or five inches high, they can be planted in shallow trenches in a few inches of soil,

underneath which has been placed some well rotted manure.

It is hardly safe to plant dwarf or pole beans until the first or second week in May.

A few sets of early potatoes can be planted early in May, or earlier if the weather is suitable. The Van Ornam and the early Ohio are two of the best first early kinds.

A good sized bed of spinach should be sown early, as the first sowing is usually the most productive and nicest eating. Late sown spring spinach is an uncertain and oftentimes useless crop, as it is generally tough and flavorless in the hot weather. The Viroflay is about the best variety for spring sowing.

Hamilton.

W. HUNT.

HOW TO MAKE CUTTINGS.



MAY BIT of a plant stuck in the ground stands a chance of growing and this bit is a cutting. Of most flowering plants cuttings or slips are taken from the green or growing wood. To tell whether the wood is in the right stage for taking cuttings give it a quick snap between the fingers and if it snaps and hangs by the bark it is all right; but if it bends without breaking, it is too young or old; or if it splinters, it is too old and woody. Sand or gravel is the best soil to start the cuttings in. It should be kept wet all the way through and be protected from the sun and too

rapid evaporation. A newspaper thrown over a box of cuttings is a good protection.

The tips of strong, upright shoots usually make the best cuttings. Each slip should have a joint near the base. Allow two or three leaves to remain near the top and if the leaves are too large, cut them in two. As soon as new leaves start well and the cutting is rooted, it may be potted into good soil in pots or boxes, but it may take several weeks or even months for the cutting to take root. As long as they remain green they are all right.

THE WAY TO FORCE PLANTS TO BRANCH.
—There is only one way in which a plant can be forced to branch, and that is by cutting off the stalk. The plant thus interfered with will make an effort to grow, and either a new shoot will be sent up to take the place of the lost top, or several

shoots will be sent out along the stalk. If but one starts cut it back. Keep up this cutting-back process until you have obliged as many branches as you think are needed. Persistency and patience will oblige the plant to do as you would like to have it do.
—*April Ladies' Home Journal.*



The Canadian Horticulturist

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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.

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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.

THE LEGAL APPLE BARREL.—Mr. E. D. Smith, M. P. for Wentworth, writes that American barrel, holding 96.51 imperial quarts has been made legal in Cap. 37, Victoria 63-64, 1900. The same act makes it punishable with a fine of 25 cents a barrel to use a barrel of smaller dimensions.

YORK IMPERIAL AND SUTTON BEAUTY apples have been fruited at the experimental orchards of the Fonthill nurseries. Of the former Mr. Wellington writes, "We think so highly of it that we are grafting an old orchard on a farm we purchased, entirely to that variety." Of the latter he says, "we believe it all right for Canada. We have sold thousands of trees which will soon come into bearing."

"Great Crops of Small Fruits and how to Grow Them" is not a mere catalogue; it is

the title of a treatise on plant life and the laws which govern the development of fruit in plants, and one which has worked a revolution in small fruit growing. Mr. R. M. Kellogg, the author, writes that he will send it free to those of our readers that apply for it.

WASH FOR SAN JOSE SCALE.—Mr. N. Keep, Winona, has just received the following recipe for a spray to kill the scale and sends it us for publication. He says it was sent him by his father-in-law in California:—40 lbs. lime, 20 lbs. sulphur and 15 lbs. of salt; take 10 lbs. of the lime, all the sulphur, and boil till thoroughly dissolved in 20 gallons of water. Slake the balance of the lime and salt together in hot water, mix and add enough water to make 60 gallons. Apply with a force pump when cold.

A DISEASE of the Cherry Tree was noticed early last summer in the cherry orchards of Kent, England. Caruthers, the consulting botanist, says it is a leaf disease, affecting the fruit also, which it renders unfit for market. In the autumn and winter diseased trees are readily detected by their holding their leaves like trees cut down in summer foliage. The growth of the wood is stunted owing to the death of the leaves. He says :

Sections through the leaf stalk show also a very luxuriant growth of the mycelium which is confined to the cortical tissue. It is very irregular in form and pushes its way between the cells. It does not extend beyond the petiole, stopping short at the point where the large cortical cells of the petiole are in contact with the small round compact cells of the twig into which the fungus does not penetrate.

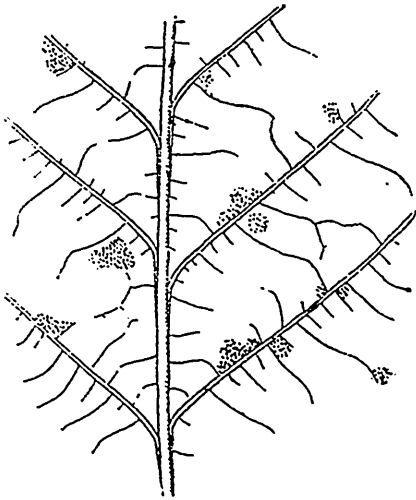


FIG. 2043. Fragment of Leaf of Cherry Tree showing groups of parasitic fungi.

The disease has been spreading rapidly in Kent during the last few years. The varieties of cherry trees that have been reported as specially liable are Waterloo, Bigarreau, Napoleon, Blackhearts, and Eltons; Governor Woods have not as yet suffered much and English and Flemish reds and May Dukes have not been attacked; though odd trees of other varieties, such as Bigarreau, growing among them have been diseased. In one orchard the disease attacked Waterloo first, soon spreading to other kinds, while at another place this variety had not been affected until last year and then only the leaves had suffered; the fruit had not been damaged.

The only remedy proposed in the old country is the gathering and burning of the

leaves. In Canada, no doubt, spraying with Bordeaux would be proposed.

Cherry cultivation is just coming to the front in Ontario, and we hope this disease may not cross the Atlantic.

UNIFORM PACKAGES FOR FRUIT. — The recommendations of our Committee on Uniform Packages have been made into an Act to amend the Weights and Measures Act, under the direction of our member for Wentworth. Mr. E. D. Smith writes that he is having the Bill prepared in both French and English, and that it will be shortly brought in for discussion. The following is a copy.

1. Every box of berries or currants offered for sale in Canada shall be plainly marked on the side of the box, in black letters at least half an inch square, with the word "Short," unless it contains when level-full as nearly exactly as practicable:—

(a) at least four-fifths of a quart, or

(b) two-fifths of a quart.

2. Every basket of fruit offered for sale in Canada, unless stamped on the side or cover, plainly in black letters at least three-quarters of an inch deep and wide, with the word "Quart," in full, preceded with the minimum number of quarts, omitting fractions, which the basket will hold when level-full, shall contain, when level-full, one or other of the following quantities:—

(a) fifteen quarts or more;

(b) eleven quarts, and be five and three-quarter inches deep, perpendicularly, inside measurement, as nearly exactly as practicable;

(c) six and two-thirds quarts, and be four and five-eighths inches deep, perpendicularly, inside measurement, as nearly exactly as practicable; or

(d) two and two-fifths quarts, as nearly exactly as practicable.

3. Every person who neglects to comply with any provision of this Act and any person who sells or offers for sale any fruit in contravention of the foregoing provisions of this Act, shall be liable, on summary conviction, to a fine of not less than twenty-five cents for each basket so sold or offered for sale, and the fine shall go to the informant.

4. This Act shall come into effect on the first day of February, 1902.

LECTURERS TO AFFILIATED SOCIETIES. — Mr. G. C. Creelman, Superintendent of Farmers' Institute, paid us a visit recently to discuss plans for the carrying out of the lectures before our affiliated Horticultural Societies. The Department of Agriculture

has consented to take this work in hand, and carry it on in a much more vigorous manner than we have been able to do. We feel sure that this plan will be a fresh inspiration to all our societies.

Already Mr. Creelman has prepared and sent out the following letter :

DEAR SIR,—At the request of the Ontario Fruit Growers' Association, and with the consent of the Hon. Minister of Agriculture, the lecture work in connection with the Horticultural societies of the province has been transferred to the Department of Farmers' Institutes.

I understand that it has been the custom of the Association in the past to send a speaker to address your meeting once every year, and it is the duty of your association to supply a comfortable hall and advertise the meeting sufficiently to ensure the delegates an interested and representative audience.

I should be glad to hear from you at once whether you wish to continue this practice. I can arrange to have a speaker attend the meeting in your town in March or April, and as a number of your members are also members of our Farmers' or Women's Institutes, it might be possible for us to arrange for one of our lady delegates to accompany the gentleman who will address your meeting. This lady would be prepared to speak on subjects connected with the home, and together with such local talent as you have in your society, would, I think, make a very attractive programme.

It might also be arranged to have the delegate, or delegates, address the school children in the afternoon of the day on which they are to attend your meeting. Besides pleasing and instructing the children, it would be a means of supplementing your advertising, and through them the adults at home would be reminded of the entertainment at night.

Hoping to hear from you at an early date, I am,
Yours very truly,

G. C. CREELMAN.

HYACINTHS AND NARCISSI—A subscriber in Ingersoll kindly encloses to us an amateur



FIG. 2044. TULIPS AND NARCISSI.

photograph of these bulbs in bloom, grown by him in pots without a greenhouse. There were twelve large blooms of Von Sion in the fern dish, and four large spikes of miniature hyacinths in the left. He writes, "I very much appreciate the advertising columns of the Horticulturist, because I have been anxious to have the names of good Canadian firms. I consider Mr. Hunt's articles excellent."

QUESTION DRAWER.

Lawn Grass.

1209. SIR,—I wish to make a lawn in the spring. The soil is fairly good clay loam, having been levelled and put in as good condition as may be last fall; what kind of seed should one sow, and should it be put on thickly and at what time; would a dressing of some fertilizer be beneficial; if so, what kind, and when applied? By answering above you will confer a favor on
Chatham.

SUBSCRIBER.

Maynard, in his Landscape Gardening, replies to these enquiries very well. Only those grasses, he says, which make a fine spreading growth, give good results in lawn making. "The best kinds for general purposes are the bent grasses, and June grass, which spread rapidly by underground

stems that quickly fill up any vacant spaces between the grass plants and thus prevent the growth of weeds. White clover is generally used in making a lawn, as it grows close to the ground and fills up all spaces not occupied by the grass roots.

While spring is the best time in which to seed a new lawn, it may be done at any time if the proper conditions of moisture can be obtained. A very large amount of manure or fertilizer and a moist condition of the soil will enable one to seed a lawn successfully at almost any time of the year, but these conditions are not so certainly secured at any other time as in spring. In fall seeding, unless done very early, the young plantlets are likely to be thrown out by frosts and a second seeding be required in the spring. Another reason why spring is better than summer for seeding is that weed seeds do not grow so readily and abundantly at this time. Coarse stable manure should never be used upon the surface of the land because it encourages the growth of weeds; but if turned deeply under, nothing can be better to hold the moisture in the soil and encourage deep rooting of the grasses.

The amount of seed to be used will depend somewhat upon the season when sown and the probable amount of weed seeds that will germinate with the grass seed. When sown in April, May or September, less seed should be used than if sown in June, July, or August, and more seed than when it is comparatively free from such pests.

It is always best to use an abundance of seed, as there may be some uncertainty of its all germinating. Perhaps the quantity per acre that will give the best results under the average conditions is two bushels of bent grass, i. e., red top or its varieties, two bushels of June grass and ten pounds of white clover. One half of this quantity would be sufficient if it was all certain to

germinate and if no weed seeds started into growth.

After the land has been made perfectly smooth and fine by raking, rolling and re-raking, the seed should be divided into two or more lots. The first lot is then sown in strips or lands, as evenly over the surface as possible, and then raked in, taking care not to move the soil from place to place, thus bunching up the grass seed with it. The second lot of seed is then sown in strips crossing the land in the opposite direction from the first sowing, thus securing the most even distribution of the seed possible.

A rake with long teeth set about two inches apart is better than the common iron-toothed garden rake. If nothing better can be obtained, the common wooden hay rake will be found to work well.

It is the general practice to roll the ground with the garden roller after the seed is sown, but in extremely hot and dry weather, while the soil may be more thoroughly firmed about the seed by rolling, the smooth rolled surface leaves the young seedling so much exposed to the action of burning sun and drying winds that grass often does better if the surface is not rolled at all."

Potatoes Too Small.

1210. SIR,—My soil seems very rich and everything grows well except potatoes and they are very small; what can I put on my ground to increase their size? It has been enriched from the barnyard every year.

D. LAW.

Probably our correspondent has used too much stable manure. The best growers advise no stable manure for the potato, unless it be the year preceding the crop; for they say it lessens the crop and predisposes to rot. Better try superphosphate in the hill at the rate of say 200 lbs. per acre, raked into the surface soil just before planting, and just before the last hoeing sprinkle with wood ashes.

Fall Flowering Shrub.

1211. SIR.—Please tell me of some flowering shrub for the fall that grows five or six feet high, and that would be hardy for this point.
Port Dover.

D. LAW.

We know of nothing better than *Hydrangea paniculata grandiflora*. This is a beautiful shrub, one that succeeds every time up on St. Joseph Island, in Lake Huron. It grows about 8 feet high and blooms in August and September, when very few shrubs are in flower. The flowers are white and borne in great pyramidal panicles a foot long.

Plums Rotting.

1212. SIR, On receipt of this kindly inform me what will prevent my plums from rotting on the trees. They commence to rot about the time they begin to ripen.

Blenheim.

G. R. GRAINGER.

This is one of the serious difficulties of the plum grower, especially in the case of such varieties as the Lombard which is very susceptible to it. Thinning the fruit before maturity is an excellent plan, for it prevents the spread of the disease from one fruit to another, and at the same time increases the size and improves the quality.

In addition to this, spraying with Bordeaux is specific treatment for plum rot and this should be done both before and after

blossoming, and again after a fortnight or so.

Importation of Nursery Stock.

1213. SIR,—In the Order in Council re importation of nursery stock, page 48, Canadian Horticulturist, you do not give the dates during which in spring and fall the goods may be imported. Would you please give me the dates during which importation is allowed.

Kingsville, Ont.

C. R. MATTHEW.

The dates for St. John, St. John's, Niagara Falls, Windsor and Winnipeg are March 16th to May 15th, and October 7th to December 7th; and at Vancouver from October 15th to March 15th.

Beggar Weed

1214. SIR,—On page forty-two of the January number of the Canadian Horticulturist, 1900, there is an article written by Capt. E. A. Wilson, on the subject of using "Beggar Weed" as a foliage plant, etc. Can you tell me whether that was tried last year in your vicinity, or as far north as this part of the country, and if so, whether the result was satisfactory, or in other words did it prove to be an available legume for this climate. I know it is fine, and will bear Mr. Wilson out in what he said of its merits for such purposes in the south, especially in Florida.—Very respectfully,

Lockport, N. Y.

E. ASHLEY SMITH.

We have mislaid his address, but we think that Capt. Wilson is an American, we think of the Southern States, so that his experience would be no guide to us at the north. We do not know of this plant having been tried in Canada.

Open Letters.**Transportation of Fruit.**

SIR I notice in the February number of the Horticulturist in connection with the article on the Brantford meeting, that in reporting for the Transportation Committee I am made to say that it is impossible to put 20,000 lbs. of grapes or mixed fruit in an ordinary car owing to the light weight of the fruit, and consequently the shipper is unable to take advantage of the reduction of the C. L. rate in the case of grapes. This statement, Mr. Editor, is incorrect and misleading.

The report stated that the committee had succeeded in obtaining a reduction in the classification of grapes in car-loads of \$1.00 per ton equal to \$10.00 per car-load of 20,000 lbs., also the privilege of loading in the same car mixed fruits such as peaches, pears, plums, grapes, in

baskets, and apples in barrels, in order to make up a car-load, and the various packages to bear their respective car-load rates. This privilege was largely offset, however, and destroyed by the restriction that in such cases 24,000 lbs. shall be a minimum C. L. This is a manifest injustice as it practically prevents putting in a few barrels in a car-load of fruit from time to time at a reasonable rate unless the minimum be raised to a limit where there is too great a body of fruit packed together for the proper and safe carriage of same.

A few of the principal changes in the present tariff and arrangements that the fruit industry requires and which should be granted by the R.R. Companies are as follows:

1st. A more reasonable rate for the carriage of fruit to the Northwest provinces at present the rate is equivalent to one half or more of the usual

gross value of the goods at wholesale in Manitoba.

2nd. A more satisfactory classification of mixed fruits in one-half carloads and carloads for all points in Ontario and Quebec, of sufficient size to absorb large quantities regularly.

3rd. A considerable reduction in the inter-provincial rate in apples in barrels.

4th. A more efficient and prompt transportation of fruits by special freight service when quantities are sufficient, and better connections with local way freight trains when quantities are smaller.

As the fruit industry grows and extends there is no doubt but that the R.R. people will see the advantage of catering more fully to the trade.

Yours respectfully, W. H. BUNTING,
Chairman of Committee.
St. Catharines, February 28th, 1901.

Appreciation

SIR.—Please accept thanks for the beautiful annual report of the Fruit Growers' Association for 1899. Have received one of the reports every year since 1891, nine copies in all. They are well bound, and are quite an addition to my library shelves.

I prize them for the valuable information which they give on fruit growing as well as general information on all kinds of Horticulture. Have grown small fruit six years in Sintaluta with success, in fact supplied my table all the year round out of a plot of ground fifty feet by forty.

So far mine is the only fruit garden in the village. Am trying to persuade others to beautify their homes in the same way

Again thanking you for the report.
I remain your's truly
Sintaluta, Assa., N. W. T. J. W. MOODY.

Our Affiliated Societies.

TORONTO JUNCTION.—The regular monthly meeting of the Toronto Junction Horticultural Society was held in the council chamber, Toronto Junction, on the evening of February 28th, at 8 o'clock, Hon. President A. Gilchrist presiding. According to notice by the society's private post card mailed to every member, President Colbeck delivered an address on the subject "Southern California—a Horticulturist's Paradise." There was a fair attendance of members who listened with the keenest appreciation to the president's interesting account of the wonderful development which, aided by favorable climatic conditions, had taken place in several sections in Southern California, especially in Riverside and Pasadena.

The lecturer urged that while results equal to those achieved in the towns named might not be achieved in Toronto Junction, a good deal might be done towards that end by a determined effort on the part of members of the society.

A hearty vote of thanks moved by Capt. Ross and seconded by Mr. Watson, was tendered President Colbeck for this interesting and instructive address.

The following programme for the meetings of the society for the year was arranged.—

1. California—a Horticulturist's Paradise. F. C. Colbeck. Thursday, February 28th.
2. Trees and Tree Planting. Arch. Gilchrist. Tuesday, March 26th.
3. The best flowering Shrubs for Ontario. J. G. Goodall. Thursday, April 18th.
4. Herbaceous Plants. Jno. McP. Ross. Thursday, May 16th.
5. Noxious Insects and Insectivorous Birds. C. W. Nash. Thursday, June 13th.
6. Melons. J. P. Spurr. Thursday, September 19th.
7. Bulbs for Fall Planting. Arthur W. Annadale. Thursday, October 18th.
8. What I Saw of Horticulture in Europe. Thos. Rennie, Thursday, November 14th.
9. Parasites. M. A. Chrysler. Thursday, December 12th.

PARIS.—At the annual meeting, the Secretary read the following report;

To the Members of the Paris Horticultural Society.

Your Directors beg leave to present their Second Annual Report as follows:

1. Instead of taking the benefit of 20 per cent. discount allowed by the Ontario Fruit Growers Association, in cash, your Directors decided to take it in extra premiums, believing that the objects of the Society would be better served, by introducing all the new plants and flowers possible, especially as we began the year with a good balance on hand.

2. In March we had a visit from Mr. Bacon, of Orilla, who delivered a most interesting lecture on "Bulbs." This lecture was one of the course under the auspices of the Ontario Fruit Growers Association.

3. Owing to the increased ravages of insect pests, and to the desire of fruit growers to destroy them as much as possible, your directors decided to purchase a spraying machine for the use of members of the society. This was done and the fruit trees of members in the town were sprayed three times, at a cost to the members of actual disbursements. Enough was learned to satisfy us that the use of the machine will be of great benefit, not only to the members individually, but to the Society as a whole, as a means of inducing new members to join. We would recommend that in future, the benefits of the machine be limited strictly to members of this Society.

4. On August 9th, a Flower Show was held in a large tent on the lawn of the Congregational church. The exhibit was large, particularly in cut bloom, and although not limited to members, it is pleasing to note that the great majority of prize tickets were captured by members of this Society. A nominal admission fee of ten cents was charged to non-members, as the receipts showed that a large number of the public took advantage of the show. The plants, grown from

the bulbs distributed to all members were here shown and the awards made. There was a large entry list in this section, thus improving the wisdom of the Society's action in stimulating competition. Not the least interesting feature of the show was the presence of Mr. William Bacon, of Orillia, who acted as judge, and at the same time gave the exhibitors the benefit of his ripe experience in floriculture. His address at the close of the show was most instructive. Our thanks are due to the officers of the Congregational church for their kindness in placing their grounds at our disposal, free of cost.

ORILLIA.—The first monthly meeting of the Directors of the Horticultural Society was held in the Council Chambers on Tuesday evening. Notwithstanding the intense cold, there was a fair attendance. Mr. Bolster, President, occupied the chair. Several matters pertaining to Horticulture were discussed. Mr. Street mentioned a pest, new to this part of the country, which had appeared on his stocks, and it was decided to submit a specimen to Professor Fletcher, of the Central Experimental Farm, with a view to ascertaining the speediest method of exterminating it. Mr. C. E. Grant gave interesting information as to some insects, including the much-talked-of "kissing bug." It was decided to invite Professor Fletcher again to visit Orillia and deliver his lecture on insects and insecticides, Mr. Grant kindly promising the use of his fine collection to illustrate the lecture. Mr. A. B. Thompson brought up the question of encouraging the beautifying of streets and private grounds throughout the town. He suggested that the Town Council, the Board of Trade and the Horticultural Society might issue a circular, offering some encouragement to those who plant shade trees in the streets.

GRIMSBY.—A most successful parlor meeting of this Society was held one evening in February at the home of Mr. M. Pettit, Winona. The principal address was by Mr. N. Keep who gave a detailed account of his experiences in raising flowering bulbs, and at the same time showing specimens of the same, grown in his own little greenhouse. This was followed by an excellent programme of music and recitations.

This Society has adopted the plan of giving away plants as premiums for the exhibits, this

being much more in line with our work than giving money prizes.

OTTAWA HORTICULTURAL SOCIETY.—This is a most progressive Society. The directors have issued a circular to their members, which read as follows:—

In again presenting a Premium List to the members, the President and Directors of the Ottawa Horticultural Society beg to state that the greatest care has been exercised in choosing the plants, bulbs, &c., for distribution, and also in arranging the prize list, and they trust that the liberal offer made this year will, as hitherto, meet with the approval of the members.

With the object of developing bulb growing—both in the dwelling house and in the garden—a list of suitable and desirable bulbs was, last year, included in the Premium List in addition to the spring distribution of plants and seeds. This step proved a most popular one with the members and the results were so gratifying that it has been decided to again this year offer a list of first quality bulbs, selected with a special consideration of the likely conditions of the members. This, together with the spring distribution, special donation, and the large number of prizes and special prizes (see prize list) for exhibitors, is a more liberal offer than accorded to members of any other Horticultural Society in Canada, but by this means the Directors feel that they are fully carrying out the objects of the Society. The Ottawa Horticultural Society is, perhaps, the most prominent and strongest Horticultural Society in Ontario; it has steadily increased its membership roll year by year and it is the hope of the Directors that it will continue to grow and have a marked influence on horticulture in this district. They trust, therefore, that the members will assist in the good work by bringing to the notice of their friends the object of the Society, pointing out the advantages and privileges its members enjoy.

In addition to the choice selections of bulbs to be distributed in September, and the extensive list of plants, &c., to be delivered in May, each member will receive one plant of Maule's Japanese Quince, donated by the Experimental Farm. The flowers of this shrub are very ornamental, being large and bright red, and in the autumn when the golden colored, highly perfumed quinces are ripe it makes a very interesting object.

LITERARY NOTE.

THE MACMILLAN COMPANY has just issued *The Elements of the Theory and Practice of Cookery*; a Text-book of Household Science for Use in Schools, accompanied by a Teacher's Manual, by Mary E. Williams, Supervisor of Cooking in the New York Public Schools; and Katharine Rolston Fisher. The three parts into which the book is divided include (1) Preparatory lessons on Air, Fire, Fuel, Water, Cleaning, etc.; (2) Starch and the Cooking of Starchy Foods, Eggs, Milk, Bread, Food in its relation to the body, Flesh used as Food, Fats and Frying, Vegetables, the Service

of food, Study of digestion; (3) Sugar and sweet dishes, Preservation, Diet for invalids, Diet for babies and little children, miscellaneous topics. The convenient arrangement of the subject-matter its adaptability to individual, group or class work, the saving of time effected by the use of a book containing notes and receipts that have ordinarily to be copied or taken from dictation, and the suggestions to the pupils concerning supplementary reading, are points that will be appreciated readily by the teacher.