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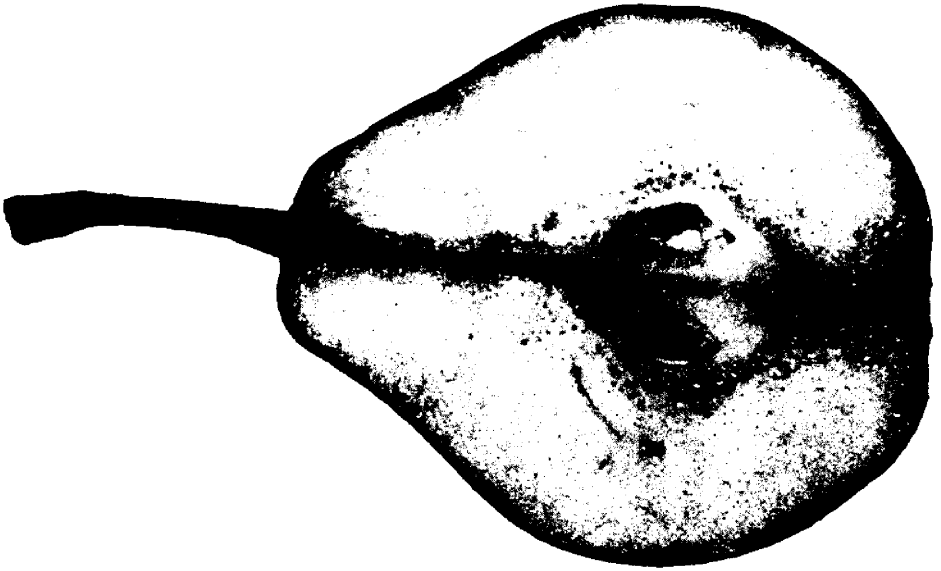
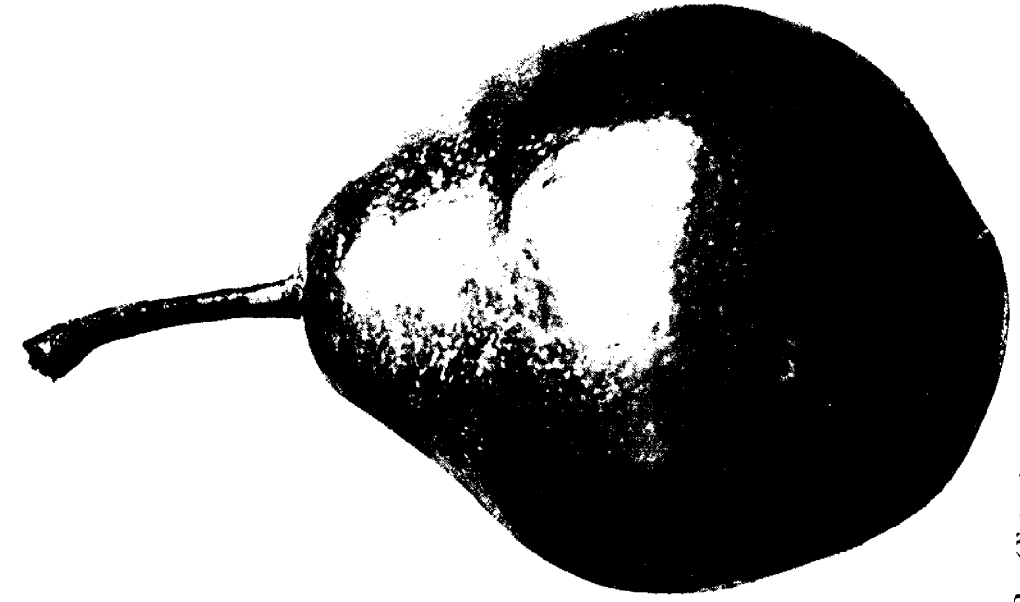
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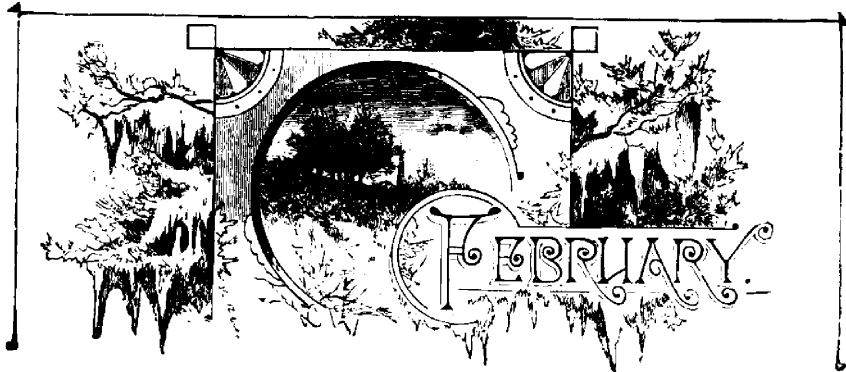
CLAPP'S FAVORITE PEAR. (*Natural Size.*)

THE CANADIAN HORTICULTURIST.

VOL. XI.

1898.

No. 2.



CLAPP'S FAVORITE.



IN these days of low prices and frequent market gluts of nearly all varieties of fruit, it will not do to plant orchards too largely of one fruit, however good. Twenty years ago every fruit expert

recommended planting the Baldwin apple, the Bartlett pear and the Concord grape, but now the folly of such advice is evident, for these fruits are now produced in such abundance that there is a very poor sale for them.

The Bartlett pear is one of our most popular, and yet for two or three years past the price is little more than enough to pay for handling. Just because everybody grows it, and it is a variety that ripens up so rapidly, dealers are very cautious about buying it in quantity. Now unless the British market opens up for this pear, or we can hold it back long after its season by cold storage, this excellent variety will become a drug on our Canadian market.

Evidently the object now before us in planting is to secure such a selection as will best cover the whole season with the finest and most salable fruit. Among the early pears we have for example Giffard, Clapp and Bartlett, ripening in the order named, beginning about the middle of August, and covering a good part of September.

Clapp's Favorite is a beautiful pear where well grown and well colored, and of very good quality, so that it is well fitted to be a profitable market pear, with one fault, that it soon passes out of prime condition, and if allowed to ripen on the tree it will rot at the core. On this account the fruit must be gathered as soon as full grown and well colored, and shipped while firm.

Origin—Raised by Thaddens Clapp, of Dorchester, Mass., U.S.

Tree—Upright vigorous grower, somewhat spreading, forming a symmetrical top; bears fruit of uniformly large size, pretty evenly distributed; productive; succeeds well as a dwarf on rich soil.

Fruit—Very large, pyriform, obovate, usually symmetrical, sometimes unequal;

THE IMPORTANCE OF GRADING.

skin pale green changing to yellowish green, with dull red on sunny side which becomes bright crimson at maturity, somewhat resembling the coloring of the well-known Louise: stalk, stout and fleshy, obliquely inserted without cavity; calyx, large, half open, in shallow basin.

Flesh—Creamy white, fine, tender, juicy, with very agreeable flavor: good to very good.

Season—August 20th, to September 1st, (1897).

Quality—Good for dessert and cooking.

Value—Good for home market.

Adaptation—Counted perfectly hardy in Grey, Simcoe, Bruce, Huron, nearly hardy in South, and tender in North Ontario County.

THE IMPORTANCE OF GRADING.

MANY growers seem to think that grading does not pay for the time and trouble incurred, and that it pays better to face up the packages, and hide the rubbish among the better grade. The mistake made by this method is well shown by the following from the Rural New Yorker:

A fruit grower sent a lot of 12 barrels of apples to market, good, bad and worse, all mixed together. They sold for \$1.50 per barrel, although there was a fair proportion of good ones among them. Here is about the way the account would stand:

RECEIPTS.	
12 barrels of apples at \$1.50.....	\$18 00
COST OF MARKETING.	
12 barrels at 25c.....	\$3 00
Freights at 10c. per bbl.....	1 20
Cartage at 5c. per bbl.....	60
Commission at 10c. per bbl.....	1 20
	6 00
Total net receipts.....	\$12 00
Net price per barrel.....	1 00

Had one-half of the best of these apples been sorted out, and carefully packed in attractive shape, they would have sold much more quickly at double the price per barrel for which the whole of them

sold. Then the account would have stood as follows:

RECEIPTS.	
6 barrels of apples at \$3 per bbl.....	\$18 00
COST OF MARKETING.	
6 barrels at 25 cents.....	\$1 50
Freight at 10 cents per bbl.....	60
Cartage at 5 cents per bbl.....	30
Commission at 10c. per bbl.....	60
	3 00
Total net receipts.....	\$15 00
Net prices per barrel.....	2 60

It is plain that, when the apples were properly assorted and only the six barrels of choice ones were sent, the net receipts were \$3 more than in the other case. Which shipment gave the most profit to the shipper? These figures do not take into account the six barrels of inferior apples that were left at home, which were worth something. Another feature of this matter is the effect on the market. The shipment of these ill-assorted, under quality products, is the greatest factor in the so called glutted markets which are a bug-bear to commission men and producer alike. The above case is not a fancy sketch, but is duplicated in different products and in various degrees every day in our great markets.

THE WATERLOO FRUIT AND FLOWER GROWERS.



FIG. 1276. --WATERLOO PUBLIC PARK.



THE above sketch presents a good view of the Waterloo public park, sloping down gently to the "lake," not very far from the waters of the Grand River, whose majestic flow adds much to the natural beauty of the country between Waterloo and Berlin. The town itself was founded in 1806, and became a town in 1876, but even as far back as 1840 there was sufficient aesthetic taste to lead to the purchase of 60 acres to be reserved as a public park. What an example to many other towns in Ontario, which with perhaps even more favored surroundings, have never yet made a move toward a public park for the rest and recreation of their industrious inhabitants. No finer site could have been chosen, for natural position and beauty, with its wooded eminence of beech and maple, its splendid bicycle track and sporting grounds.

The Horticultural Society of Waterloo takes a deep interest in the improve-

ment of this park, and hopes to make it one of the best inland parks in Canada. In 1895 the Society planted

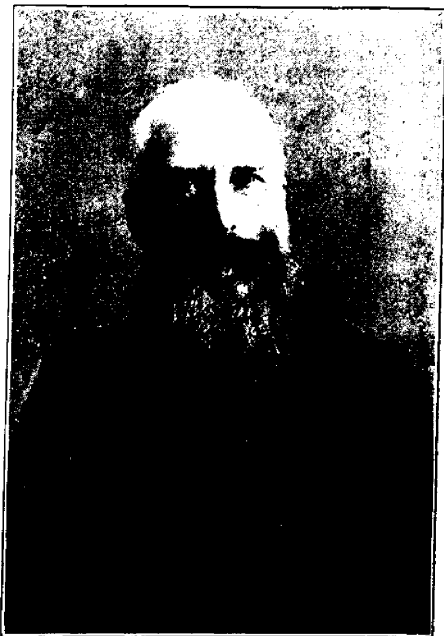


FIG. 1277. --MR. JAS. LOCKIE.

THE WATERLOO FRUIT AND FLOWER GROWERS.



FIG. 1278.—A VIEW IN WATERLOO PARK.

the first flowers in it, a bed of cannas, and have continued this ever since; and last year added a bed of German Irises.

Mr. Jas. Lockie, the active president of this Society has done such excellent service in horticulture in Waterloo, that

we have asked to have his photograph engraved for our pages. He was born in Scotland in 1833, came to Canada in 1855 and worked at his trade as a carpenter, until 1870, when he went into the fire insurance. In this he was successively, agent, head clerk, inspector



FIG. 1279.—A SCENE ON SILVER LAKE, WESTSIDE PARK, WATERLOO.

THE WATERLOO FRUIT AND FLOWER GROWERS.



FIG. 1280.—WATERLOO TOWN, LOOKING NORTH-WEST.

and manager; and last September was appointed president. He was also presented with many valuable testimonials showing the esteem in which he was held by the company.

Always having a taste for gardening and flowers, he always made them a study in his travels, and now has a small greenhouse containing nearly one hundred different varieties of cacti, and a varied assortment of other plants. His garden is fairly well filled with perennial plants. He has twenty varieties of lilies, eight hundred bulbs of gladioli, as many tulips, a large number of hyacinths, *Iris Germanica*, *Kaempferi*, *Anglica* and *Hispanica*, twelve varieties of clematis, and many beautiful native wild flowers.

In order to give some idea of the excellent work of our affiliated Society at Waterloo, we take the following from the address of Mr. Jas. Lockie, the President, at our last meeting. After speaking of the failure of the ordinary method of conducting such a Society by spending money in prizes, and the wisdom of using the funds instead in

the purchasing of plants, seeds, literature, employing lecturers, etc., so that all the members get equal benefit, Mr. Lockie proceeded as follows:—

You are probably aware that the majority of this town are Germans or of German extraction, and, if there is any one thing more than another that the German cares for, it is his home and his garden, growing his vegetables and small fruits and having flowers in his home. So we had no difficulty in forming our Society, and soon had seventy-five members for the year. The success was almost unprecedented, and the next year with very little difficulty we had one hundred and twenty-five members, and in this, our third year, we have one hundred and fifty-five—not a bad showing for a town of 3,300 inhabitants.

During the year we have received from your Association and distributed to our members 25 new Japan lilacs, 75 Japan lilies, 28 Conrath raspberry and 37 Dempsey pear trees. Regarding the lilies, I may say that the bulbs were fine. I saw one growing in the garden of a

THE WATERLOO FRUIT AND FLOWER GROWERS.

gentleman present, with thirteen flowers upon it. They were exceedingly satisfactory, and we are much obliged to your Association. Besides, we ourselves purchased and distributed 67 plum trees, 67 cherry trees, 402 raspberry plants, 37 hydrangea grandiflora, 37 rose bushes, 612 house plants and 1,860 hyacinth bulbs. It requires no explanation on my part to convince everyone that such a distribution must have a great effect in a small town like this, which will be evident in a few years. The hyacinth bulbs have proven very satisfactory, a good many members hav-

We well know how much your Association has done with the aid of the Government to encourage fruit growing in this country, which is a great source of wealth, but we consider that the Government is also doing well in assisting floriculture. I can see nothing that tends to encourage home making more than growing flowers about the house and garden.

We have an exhibition here which is made free to the public. The town council gives us the free use of the hall, and we invite everybody who chooses to bring in exhibits, and we send a con-



FIG. 1281.—SCENE IN WATERLOO PARK.

ing never grown them before. You can hear the school children telling each other of the beautiful flowers they have in their houses. They had seen the dry bulbs put in a flower pot with some earth and set away in the cellar for some weeks, and anxiously inquired why. Later they saw these bulbs brought up with the spikes started, and watched them day after day until they blossomed into beautiful and fragrant flowers as fine as the richest grow in their conservatories. See what an influence all this has had upon them.

veyance to bring and return heavy and valuable plants. You would require to visit our exhibition to see the interest that is taken in it. A committee of ladies with excellent taste arrange the plants upon the tables, not classifying them as when prizes are given, but they place them in the centre and around the sides of the hall so as to produce the best effect, for in this way you can arrange flowers and shrubs of different colors so as to make a beautiful display, much better than when they have to be arranged for judging.

PRUNING RASPBERRIES.

Now, sir, we of the Horticultural Society have a creed. We believe in our society, that it has been the means of encouraging an elegant and refined taste and has a powerful influence in bringing about an improvement in our town, in our homes and in our public parks. We believe in our country, we believe in Canada, though many of us have been born in distant lands, and, of course, cherish those lands with true affection, but, nevertheless, we all love

Canada. Tennyson says in his poem to Alexandra :

Though Norman, Saxon and Dane are we,
We all are Danes in our welcome to thee.

We may parody that by saying :

Though German, English and Scotch are we,
We all are Canadians in our welcome to thee.

We are gratified and pleased with this meeting, and hope for good results, and wish you still further success in your work.

PRUNING RASPBERRIES.

A GREAT saving of time can be made in the fruit farm by winter pruning. If the snow is not too deep the gardener can cut out all old wood from his raspberry plantation, and have it burned. He can at the same time shorten in his red raspberry canes, cutting off the weak ends a little so as to throw all the strength into the plump vigorous buds, and thus secure an abundance of large berries. The black caps need cutting back in the growing season, because they are more vigorous in growth, and will throw out numerous side shoots which will fruit abundantly the following season. This would not suit the red raspberry because it is less vigorous, and the small side branches would be too weak to give fine fruit, and therefore should for the most part be discouraged.

AN OLD APPLE TREE — Mr. Jacob Stroth, an amateur photographer and antiquary at Waterloo sends us a photograph of the oldest apple tree in that

section. It is on the Sherk homestead on the banks of the Grand River opposite the village of Doon. The tree is grown from seed brought from Pennsylvania in 1800; and measures at the base 3 ft. in diameter, and at a distance of 5 ft. from the ground, 2½ feet.



FIG. 1282 — AN OLD APPLE TREE AT WATERLOO.

ELÆAGNUS LONGIPES.



FIG. 1283 — ELÆAGNUS LONGIPES.

ONE of the finest among the new ornamental shrubs available, is the long-stalked Elæagnus, or Elæagnus longipes, a species of Wild olive, or Oleaster. It grows to a height of about three feet and is a very pretty spreading evergreen shrub, with deep reddish brown twigs, and

clusters of long-stalked, orange-colored flowers opening about the middle of May, and succeeded in July by pretty red berries, which hang some weeks and are edible. The engraving, kindly loaned by Messrs. Stone and Wellington, gives a good idea of a fruiting branch well loaded with berries.

THE SAN JOSÉ SCALE.

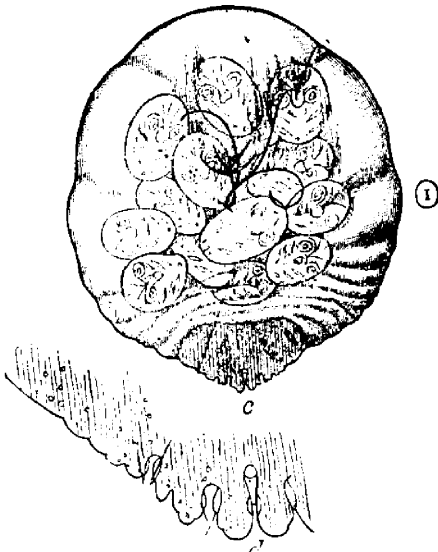


FIG. 1284. — SAN JOSÉ SCALE.

IN response to the earnest request of our Association, the Minister of Agriculture for Ontario has introduced a bill to prevent the spread of the San José scale, which in its amended form, has received the full sanction of the House. The importance of this act of Parliament is so great that we give the full text of it in this issue, and earnestly beg the hearty co-operation of members, and of our readers everywhere, in carrying out its provisions. Those who received advance copies of the Act at our meeting at Waterloo, will notice that certain changes have been made, with the object of making the bill still more stringent. The object is to stamp out this pest in those few sections of Ontario into which it has been introduced upon United States nursery stock; and if this can be done by Provincial legislation, we hope to keep out further importations by a Dominion Act. With this in view a committee of our Association has waited upon the Hon. Sidney Fisher,

and are encouraged to expect that prompt and speedy action will be taken.

An Act to prevent the spread of the San José Scale.

Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

1. This Act may be cited as *The San José Scale Act*.

2. In this act the word "Minister" shall mean the Minister of Agriculture for the Province of Ontario.

The word "Plant" shall mean any tree, vine, shrub, or any part of a tree, vine, shrub or plant, the fruit of any tree or plant.

The word "scale" shall mean the San José Scale insect in any of its stages of development

3. No person shall import or bring, or cause to be brought into the Province of Ontario, for any purpose whatsoever, any plant infested with scale

5. For the purpose of scientific investigation the Minister may from time to time, by writing given under his hand, except such persons as he may deem proper, from the operation of the two preceding sections, and while acting under such permission, such persons shall not be subject to the penalties imposed by this Act.

6. Any person having reason to suspect that any plant in his possession, or in his charge, or keeping, is infested with the scale shall forthwith communicate with the Minister in regard to the same, and shall furnish the Minister with all such information in regard to the source or origin of the said infestation and the extent and nature of the same as he may be able to give.

7. Whenever the scale exists, or is supposed to exist on any plant, the Minister may direct a competent person to make an examination and inspection and may order that any plant so infested, or such part as he may deem advisable, shall be immediately destroyed by burning either by the person appointed to make the inspection, or by the person owning or having possession of the said plant or some other person so directed in writing, and the person so directed shall make a full report to the Minister in writing as to the nature and extent of the work so performed, together with a fair estimate of the value of the plant destroyed.

8. For the purpose of enforcing this Act, it shall be the duty of every inspector appointed under *The Yellows and Black Knot Act* to make careful examination and inspection for the occurrence of the scale within the municipality to which he is appointed, and to report forthwith to the Minister every case of infestation and neglect to make such report shall render the inspector liable to the penalties imposed under section 11 of this Act.

THE SAN JOSÉ SCALE.

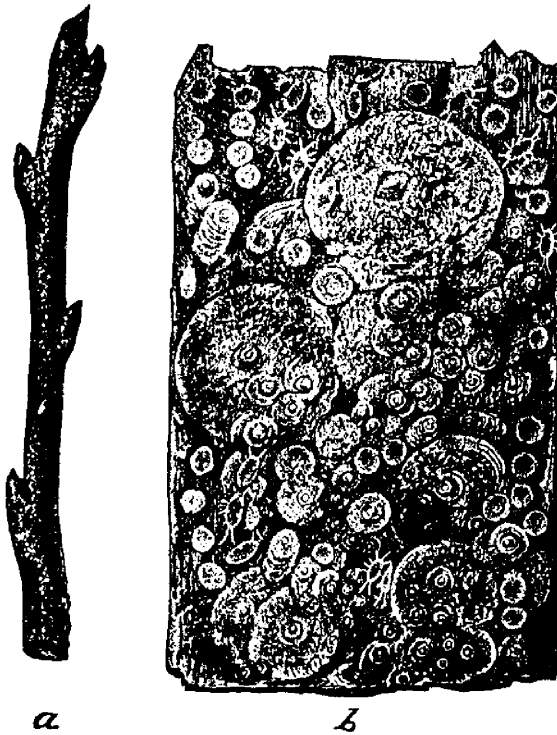


FIG. 1285. —Appearance of scale on bark. *a*, infested twig natural size. *b*, bark as it appears under hand lens, showing scales in various stages of development and young larvae.

9. Any person appointed by the Minister under this Act to inspect, or to destroy any plant, for the purpose of enforcing the provisions of the Act, shall, upon producing his authority in writing, have free access to any nursery, orchard, store, storeroom, or other place where it is known, or suspected, that any plant is kept.

10. Upon the recommendation of the Minister there may be paid out of the Consolidated Revenue Fund of the Province to the owner of any plant (not including fruit) so destroyed a sum not exceeding one-fourth of the value thereof as reported upon by such officer or other competent person, appointed as aforesaid, but nothing in this section shall apply to any plant imported into the Province within a period of one year prior to the examination by the officer aforesaid.

11. Any person neglecting to carry out the provisions of this Act, or any person offering any hindrance to the carrying out of this Act shall, upon summary conviction, be liable to a fine of not less than \$20 nor more than \$100 together with costs, and in default of payment thereof shall be subject to imprisonment in the common jail for a period of not less than ten days nor more than thirty days.

12. The Lieutenant-Governor in Council may by order direct that other scale insects than the San José Scale may be included in the provisions of this Act, and therefore during the continuance of such Order-in-Council the word "scale" in this Act shall include all other scale insects. Public notice of such Order-in-Council shall be given by publication in two successive issues of The Ontario Gazette.

The importance of preventive measures is further shown by the statement of Prof. Stedman, Missouri,

that already this pest has done several millions of dollars damage in California; and threatens to be still more destructive in the East. Its first appearance on the Continent was in San José, in 1873, having been brought there from South America. Within twelve years it has infested every fruit section of that State, and reached the orchards of Oregon and Washington.

In 1892 it was found in New Mexico, and also in several eastern states, more especially New Jersey, whither it was brought on some Japan plum stock.

Evidently this pest will infest every orchard in Canada within the next ten years, unless the greatest promptitude is taken to destroy it.



WINTER PROTECTION OF THE PEACH.

NUMEROUS experiments in protecting the peach against winter killing have been carried on at the Missouri Experiment Station during the past two years. The results of these trials are reported by Prof. J. C. Whitten in bulletin thirty-eight of that station. The bulletin is illustrated with cuts showing different methods employed, and is for free distribution among the peach growers of the Mississippi Valley. In this latitude, winter killing of the fruit buds of the peach is usually due to the unfavorable effects of freezing, after they have been stimulated into growth by warm weather during winter or early spring. It is seldom that the temperature drops sufficiently low to injure dormant peach buds. Peach fruit buds may safely endure a temperature of 10 or 20 degrees below zero, provided they mature well in autumn, are entirely dormant, and the cold comes on gradually. Zero weather may kill fruit buds that have swollen during previous warm days, or that were not properly ripened in autumn. The early swelling and growth of the buds is due to the warmth they receive from the sun on bright days, is practically independent of root action, and may take place on warm, sunny days in winter, while the roots are frozen and dormant. Shading or whitening peach trees to prevent their absorbing heat on sunny days, opposes growth of the buds, and is, consequently, a protective measure. Whitening the twigs and buds by spraying them with lime whitewash is, on account of its cheapness and beneficial effects, the most promising method of winter protection tried at the station. These whitened buds remained practically dormant until April, while unprotected buds swelled perceptibly during

warm days late in February and early in March. Eighty per cent. of the whitened buds passed through the winter safely, while only 20 per cent. of the unwhitened buds escaped winter-killing. Whitened buds blossomed three to six days later than unwhitened buds. Thermometers covered with material the color of the peach twigs, registered, during bright sunny weather, from 10 to over 20 degrees higher than thermometers covered with white material of similar texture, thus indicating that whitened peach twigs might be expected to absorb much less heat than those that were not whitened. The whitewash used was four parts of water, one part of skimmed milk, and enough freshly slaked lime to make as thick a wash as could conveniently be pumped through a Bordeaux spray nozzle without clogging. This wash was sprayed on the trees by means of a bucket spray-pump. The first application was made the last of December, and three subsequent sprayings were necessary to keep the trees thoroughly coated until spring. The cost for material and labor is about 40 cents per tree, when done on a small scale.

Shading the trees with canvas hay covers was about as beneficial as whitening, but was more expensive. "Baling," by drawing the branches together is a vertical bundle and covering them with coarse grass and corn-stalks, protects the buds. Old trees with stiff branches cannot well be treated in this manner without injury to the branches. "Layering," or bending down the trees in autumn, and covering them with earth, has proven beneficial. Shading the trees with broad sheds enabled peach buds to survive the winter uninjured, when 80 per cent. of unprotected buds

PLANTING AND CARE OF SHADE TREES AND WINDBREAKS.

were killed. Trees protected in this way blossomed later, remained in bloom longer, set more fruit in proportion to the number of apparently perfect flowers, and held their fruit better than any other

trees on the station grounds. This is the most effective means of winter protection tried at the station, but it is probably too expensive for commercial orchards.

PLANTING AND CARE OF SHADE TREES AND WINDBREAKS.

HERE is great room for improvement in the country districts of Ontario by planting shelter belts of native trees.

With strange madness the farmer has wantonly destroyed from the borders of his fields beautiful ornaments which nature had provided, and which would have afforded a wealth of attractiveness to his lawns and gardens, and as a result his houses and barns are bare of shade, and of those beautiful clumps of trees which would have screened the unsightly, and shown off the interesting features of the house.

With the hope of encouraging tree planting, especially about our fruit farms, we give place to a paper in the Farmers' Institute report, by Mr. Alfred Brown, of Picton, Ontario, a member of our Association :

"Farmers generally do not take advantage of the very easy and sure way of adding value to their real estate by planting our native trees in neat lines along road sides and lanes, around buildings and yards, in waste or unsightly places, or bluffs that are too rough for cultivation. These places, planted with black walnut, I believe, will be as good an investment as the same area of apple orchard on suitable soil, although dividends will not be realized from the walnut timber as early as from the apples. American black walnut can be grown better by planting the nuts di-

rectly where the trees are wanted, as the walnut is a little difficult to transplant owing to the large tap-root and the absence of fibrous roots. This condition applies to most of the nut-bearing trees. The walnut begins to bear at Picton when planted about eight to ten years, and although the nuts are quite strong flavored they are relished by some people. For planting, the nuts should be gathered when ripe and not allowed to dry. They can be kept out doors by packing in a box of sand, or may be planted directly where desired. Cover the nuts three inches deep, mulching lightly ; keep down grass and weeds and use plenty of manure. When once started the trees increase in diameter about half an inch every year. American sweet chestnut is grown for commercial purposes mostly in the natural state, but when planted in the clearance makes a good shade tree. The leaves are nicely serrated and glossy, giving the tree a beautiful appearance.

Hickory nuts have grown quite popular in the markets, and in selecting for planting, only use from trees bearing good sized, plump meated nuts. These and the chestnut require the same treatment as mentioned for the walnut. Basswood, when planted in the clearance, forms a pretty, compact-shaped head, and besides being valuable as a timber, shade, and ornamental tree, it is a source of the best crop of honey pro-



FIG. 1286.—View of Mixed Forest Belt at Central Experimental Farm, Ottawa, July, 1897, showing growth of trees planted in spring of 1888.

duced by any plant grown in Canada, and as our forests are being destroyed it would be wise to have the basswood planted extensively for the encouragement of apiculture, for bees are valuable to fruit growers and farmers, as they insure fertilization of flowers. Basswood grows readily from seeds.

Sugar, or hard maple, our national emblem, should be planted broadcast everywhere where there is room for a tree, as it may be had in most localities for digging. It grows a symmetrical shaped head when properly planted and pruned. The soft maple grows very rapidly, and will succeed on a greater variety of soils than the hard maple. Trees in our yard planted eight years are six inches in diameter and give plenty of shade for the hammock. Maples can be dug best with a strong sharp spade, cutting a circle around the

tree twenty-five to thirty inches in diameter and lifting out the plant with what soil and leaves adhere to it. Cut off all branches and saw off the top not more than seven feet from the roots. The trees that have given us the best growth were one and a half to two inches in diameter a foot from the ground when planted. When growth starts rub off all buds except a few at the top of the bare trunk to form a head.

Norway spruce is the best evergreen for practical use in Ontario, either as a wind-break or as an ornamental tree. It makes a dense upright growth of uniform shape, and is very attractive planted alone or alternately with deciduous varieties. Keep trees well mulched, which comes nearest to their natural condition. The writer does not favor planting trees thicker than they are to remain, except where straight long trunks are required

HORTICULTURE IN OUR SCHOOLS.

for timber, for it requires more courage than most men have to thin out a row of trees when once they are established. The farmers at the Institute meeting at Glen Allan, estimated that a farm having 100 shade trees well arranged would sell for \$500 more than a similar farm alongside, other improvements being the same. When young trees can be found not more than a mile from the place where needed, the 100 trees can be selected, dug, trimmed, and planted for \$5 if the work had to be hired, but most farmers are strong-handed enough to plant 100 trees every spring.

Possible injuries.—(1) Where planted too thickly so as to form a wind-stop, which is not desirable. A free circulation of air might be prevented and thus encourage insects and fungus growth. (2) Encroachment, adjacent crops will certainly be injured, but a good wind-break or line of ornamental trees are well worth the land they occupy.

Decided advantages.—Evaporation is lessened and the moisture in the soil assimilated by growing crops instead of being hurried in the air by heavy winds. For illustration of this point, refer to Prof. Panton's experiment in the Report of the superintendent of Farmers' Insti-

tutes for 1895-6, page 60, which shows that wind hastens the moisture out of the soil. (2) Protection of bloom from cold, rough weather will ensure a good crop which might from exposure result in a light yield. (3) Snow and leaves are retained and help to retard fruit bloom in localities subject to late spring frosts. (4) Less injury is sustained from wind when trees are loaded with ice which ruins so many fruit trees; also the loss from windfalls is reduced. (5) Erect growth in fruit trees is difficult without protection from prevailing winds. (6) Encouragement of insectivorous birds. This advantage alone is worth the land and care required to have a good wind-break where the birds will build their nests and rear their young largely on insects that destroy our crops. These birds and their nests should be protected by legislation, including the extermination of the English sparrows, which are driving useful and friendly birds out of the country by destroying their eggs and taking possession of the nests for their own use. (7) A farm beautified by shade trees is enjoyed both by the travelling public and by the farmers themselves."

HORTICULTURE IN SCHOOLS.

WORK FOR OUR HORTICULTURAL SOCIETIES.

WE are no advocates for increasing the burdens of school children by placing in their hands a manual of Horticulture in which the art of cultivating fruits and flowers is reduced to a science couched in technical terms, and thus necessarily made distasteful to our young people.

But if some means could be devised

of giving practical training to such scholars as desired it, in a school garden, it would be a pleasant diversion from the severer studies, and at the same time give the best training to the eye and hand, resulting not only in a generation of farmers better skilled in the art of gardening, but also with more taste and inclination for to pursue it. A writer in *Vick's Magazine* says —

GARDEN HINTS.

"The Horticultural Society of Massachusetts is trying the following plan: Cash prizes of \$15, \$12 and \$10 are offered for school gardens; these prizes not to be awarded on exhibits of ordinary garden plants, but on wild plants such as ferns, fancy grasses, violets, asters, vegetables and grains. Prizes are also awarded on herbariums made up by the school children. This plan cannot fail to awaken interest among the little folks, as the desire to be first in everything is as strong in them as in those of larger growth.

"The Germans, always noted for their love of flowers, have started a school of gardening for girls in one of the suburbs of Berlin. There are several pupils, who wear a uniform of dark gray material, consisting of a bodice and skirt, the latter being made in such a way that it can be shortened at will when at work; they do all the work of the garden, raising vegetables, flowers and fruit, for all of which a ready sale is found. Many of them are fitting

themselves for head gardeners, and some have already left the school to go to such places. In a large place where under gardeners are kept, there seems to be no reason why women cannot fill the position of head gardeners, if they fit themselves for the work.

"In Russia it is a common custom to have school gardens in connection with the village schools: the use of the land is given by some landlord or hired by the government, and the small expenses connected with the work are also provided for in the same way. The work is taught regularly in the schools, usually by the school master, who has received his instruction from some practical gardener. Some sections of the country being tree-less, the work is almost entirely devoted to the raising of trees, which are given out among the children, when of sufficient size, to plant at their homes. In other places, grapes are the principal crop, while in others, silk worms are raised and mulberry trees cultivated for them to feed on."

GARDEN HINTS.



THOSE who contemplate growing tomatoes for the English market, should sow seed at intervals so as to keep up a succession of fruit. A special variety must be selected which does not grow too large. The Ignatum was the variety sent forward last year, and the complaint was that it was too large. In instances we selected only the small size, of uniform grade, and these sold at good prices. We allowed the plants to spread as they chose, with-

out any pruning, and the yield was good but we notice that some writers advise confining them to a single stem. No stopping, they say, of the leaders is necessary or advisable till at least four clusters of fruit are set on the stem. No superfluous side shoots should however be allowed to grow, but be kept instead closely pinched out. The side leaves should be left on the single stem, only the side shoots being removed. Otherwise the stem would be laid bare and this is undesirable.

MUSHROOM CULTURE.

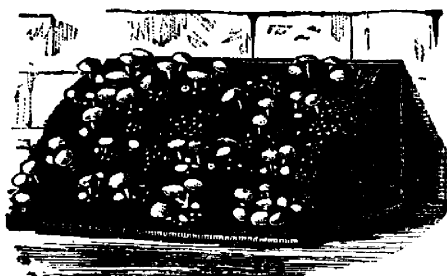


FIG. 1287.—BED OF MUSHROOMS.

THE cultivation of this nutritious esculent is a very simple matter, and requires only ordinary intelligence and care. The materials needed are fresh horse manure, good soil and live spawn. The manure should not be too short, as it does not combine the necessary qualities. Long strawy litter plentifully mixed with short manure, makes by far the best beds, as it does not heat too violently, decomposes slowly, and retains its heat for a long period. Put in a heap and turn every 3 or 4 days to permit the escape of noxious gases, and prevent burning. Manure that has become white or "fire fanged" and mouldy is worthless for mushroom beds. When ready for use it should not possess an offensive odor, and should be as hot as can be borne comfortably by the hand. It should also be moist, for if too dry the decomposition of the mass will be rapid, and the bed exhausted before the crop has matured. If a shed or cellar is not available they can be grown in the open air, but the time necessary to perfect a crop will be longer. Make the beds 3 feet wide at the base, 2½ feet high, tapering to 6 inches at the top, and of any desired length. The manure when in proper condition, should be quickly handled to prevent the loss of heat, and be beaten down to make the heap firm and compact. When of

the desired size the sides should be dressed down neatly and the heap covered with long litter. Allow this to remain till the heat has decreased to 90°, at this point the bed is ready to receive the spawn, which is done by raising the manure with the hand and inserting pieces of spawn 2 inches square, 9 inches apart each way. Liberal use of spawn results in larger crops. Many beds fail to give satisfactory returns owing to the bricks being broken in too small pieces. At the expiration of three days the spawn will have commenced to run, and the bed is in proper condition for covering with soil. Any good fresh soil will answer, but turfy loam from an old pasture or meadow is preferable. If the soil is poor add a liberal quantity of bone meal. The earth should be just moist enough to press together nicely; if too wet when put on it is apt to crack and thereby permit the heat to escape instead of permeating the heat evenly. If the soil is light put on to the depth of 2 inches, but if heavy 1 inch will be sufficient. The bed should again be covered with the litter, and it should remain on till the bed is exhausted, only removing it to gather the crop. If the bed shows signs of dryness water on top of the litter, and not directly on the soil.

Mushrooms can be readily grown in cellars, stables, sheds or pits. The requirements as to manure, soil, etc., are similar, but the season can be prolonged and the temperature regulated more easily than in the open air. Many are successfully grown on the shelf in an ordinary cellar, and yield sufficient crop to compensate the grower for his effort. Spent hot beds also meet the requirements of the mushroom in a large measure. Bits of mushroom can be inserted before the bed has become cold

THE MASSACHUSETTS HORTICULTURAL SOCIETY

between the plants. When the plants are removed keep shaded with long litter, and water occasionally if necessary. The space under greenhouse benches or stagings will suit them exactly, using materials in same manner as described. They will also grow admirably on top of the bench, using cloth for shading instead of litter. The time required for a bed to come into bearing is three to six weeks.

In gathering the crop do not cut with a knife, but pull them up with a twisted motion.—J. A. SIMMERS, Toronto.

MUSHROOMS ON SHELVES.—The Horticultural Times says, short horse droppings, partially dry, thrown in a heap and allowed to ferment, form the right kind of material for raising mushrooms artificially. A good way is to build shelves on the wall of a shed or cellar, fill each full of the material; press the droppings close;

cover with two or three inches of soil. Allow the bed a few days for the heat to rise, when it is ready for spawning. The spawn is sold by seedsmen in the form of bricks, which have to be broken up into small pieces about the size of a walnut, and set into the bed just below the soil. If the bed is right, having gentle heat and a little moist, not wet, the spawn will quickly spread through the whole mass, and in about a month the little white buttons will appear all over the beds, and in a very short time after the full-sized mushrooms. Any position that can be kept not warmer than 65° or 70°, and not colder than 50°, will grow them the whole year through, but beds require to be renewed after a second crop, which can often be had from the same spawning. Any place light enough to work in will be light enough to grow mushrooms; indeed, some grow them without any light.—Horticultural Times.

MASSACHUSETTS HORTICULTURAL SOCIETY.

THIS is one of the oldest and most respectable societies of the kind this side the Atlantic, and a study of its methods would no doubt be suggestive to many of our newly formed societies in Canada. We do not wish to commend its extensive prizer list, for in our opinion, a large expenditure of time and money in this direction cripples any society, and hinders its general usefulness, by confining the benefits to a few specialists. What we aim at in our affiliated societies is the general good.

One means to this end is the meetings for hearing lectures or reading and discussing papers. The programme of the above named society has come to hand, and provides for ten winter meetings of

an hour or two each, to be held at 11 o'clock every Saturday morning, except the 1st Saturday which is reserved for business. The following is the scheme and addresses:—Jan. 8th, The Business side of Fruit Culture, J. H. Hale; Jan. 15th, Horticulture in Holland, with stereopticon illustrations, by Mr. Farquhar, Boston, Mass. Jan. 22nd, Originating new Vegetables, Hon Aaron Low; Jan. 29th, Nuts and Nut Culture, F. M. Bartram; Feb. 12th, New Notions about old Insects, Professor Slingerland; Feb. 19th, Trees in Streets and Elsewhere, W. R. Smith; Feb. 26th, The National Flower Movement; March 12th, The Value of Nature Studies in our Schools, Geo P. Powell; March 19th, Resistance of Plants to Parasitic Fungi, Professor

MULCHING STRAWBERRIES.

Burt; March 26th, Native Ferns of New England, illustrated with numerous slides, H. L. Clapp.

Why should not our Ontario Societies take a hint, and plan out a course of meetings for the remaining months of

the winter, with one subject for discussion at each meeting, introduced by one capable person. Eleven o'clock Saturday morning might not suit every where; for often an evening meeting will be preferable.

MULCHING STRAWBERRIES.

IT is a general practice among fruit growers, especially those in localities where the winters are severe, to give their strawberry beds some kind of mulch after the ground becomes frozen in the fall.

The mulch serves for several purposes, winter protection to the plants, summer conservation of moisture, cleanliness of berries and subjugation of seeds during the fruiting season.

It may be of clean straw, marsh hay or forest leaves. Fine marsh hay or leaves is the best, but one must be governed by the variety and cost of the material at hand, especially an extensive grower, but whichever material is used, it should be free from foul seeds, and be evenly distributed over the plants that the plants are not smothered.

It should be only thick enough that the plants are not discernible. As soon as freezing weather is past in the spring, this mulch can be worked away from over the plants and into the middle of the row, leaving that which is under the plants undisturbed, so as to keep the berries free from sand.

Should the season be dry, this mulch will be of much benefit to retain moisture for the development of the fruit, as

the strawberry is 82 % water.

It likewise serves the purpose of a cultivator, preventing the growth of weeds. When the fruiting season is over, we mow the vines over, and as soon as dry enough, are burned, selecting a day when a brisk wind is blowing so the vines will burn quickly without injuring the crowns of the plants:

The cultivator is kept going often enough to keep the ground mellow and the weeds subdued. By winter a new growth of vines have appeared and are prepared to yield another crop. This method has enabled us to keep our beds in bearing much longer than by any other method we have yet tried.

Unless the ground is previously free from all foul seeds and grasses, this plan will prove a failure. It is necessary that some cultivated crop be grown upon the ground before setting to plants. Buckwheat has proved a good crop to grow on my soil. Sod ground should be avoided as it is quite apt to be infested with the larvæ of the May beetle, commonly known as the white grub, besides several other injurious insects.

B. H. WOOD,

Kalamazoo Co., Mich.



CHRISTMAS FRUIT IN LONDON, ENGLAND.

SINCE Ontario fruit growers' are so deeply interested in the export of their fruit to Great Britain, and have reason to hope that this trade will be successfully opened during the coming season, by means of improved cold storage provisions, and the experimental shipments carried on under the supervision of Prof. Robertson, we give some extracts from the Daily Standard, concerning the fruits on the Christmas market.

A stroll round the wholesale fruit markets of the Metropolis, and a visit or two to the Pudding-lane sale-rooms and the docks and wharves, will satisfy anyone that the prospects, as far as the Christmas supplies of fruit are concerned, are better than they have been for many a year. Naturally, the question of Christmas fruits leads one, especially when experienced in the ins and outs of the enormously expanding fruit trade, to state a few facts, first of all with regard to the apple—the king of fruits. At the present time we are deriving our outside supplies from Belgium, Canada, France, Holland, Italy, Spain, and the United States. They are coming in in fair quantities. During one week lately we received twenty thousand bushels from Canada, thirteen hundred from France, two thousand five hundred from Italy, four thousand three hundred and thirty from the United States, and fourteen hundred and one from Spain. These quantities, added to other but insignificant supplies, and the receipts at other ports outside London, bring up the weekly total of apple imports to over fifty thousand bushels.

On the other hand, the home stocks are short, and especially of choice samples, for which an unlimited demand prevails at high prices—at prices, it may surprise the general public to know, higher than have been known in the history of the fruit trade. Whilst we have a goodly display of grand Nova Scotian Ribstons on show, of deeper-colored Blenheim Orange, and of delicately-hued King also of magnificently-colored American Ben Davis, Baldwin's, and the pale but golden-skinned Newtown Pippins, we have in spite of the shortage in the home stocks, English apples far superior to those named above in every point. We have some grandly-colored Blenheim Orange of enormous proportions, of perfectly-shaped King, big mellow-looking Ribston Pippin, GALT Golden Noble and Bismarks, the latter a splendid fruit, for sale, Lane's Prince Albert, and last, but not least, Bramley's Seedling,

one of the finest cooking and heaviest croppers known; also Wheeler's Russet and Old Nonpareil, that old-fashioned but exquisitely flavoured apple, of which tradition has it that it came from France, and was set by a Jesuit in the days of good Queen Bess. These English apples are referred to simply to show that, in spite of the advances made by the foreign producer, the British apple, as regards size, color, lusciousness, flavour, and value, stands without a rival, and in this year of Jubilee holds its own—aye, and easily—against all comers. What shall be said of Bess Pool, that finely-striped red apple, the best of which come from Herefordshire, and which keep well from November till March, and is such a pomological dainty that few except the richer classes ever have the pleasure of tasting it. The seedling tree of this apple was said to have been found by a country lass, in a wood. She, gathering some of the fruits, carried them to her father, the keeper of the village inn, from whom grafts were in due course obtained, and the variety handed down to posterity. The name of the little lassie was Bessie Pool, hence the name of the apple.

Pears deserve more than a passing notice. Fifteen and twenty years ago, enormous pears from Paris used to be marked up in the Grand Row at Covent-garden Market at ten, twenty, and thirty shillings each, and they were even lent out for table decoration at West-end parties. They were immense fruits, and usually created much astonishment when seen. So with the large supplies of Autumn pears. French fruits have monopolised the English markets. During the past few months, however, they have been eclipsed by the superior pears from California. The Californian Easter Beurrés are superior to the French ones. So with the Beurré Diel, Glou Moreau, Winter Nelis, and Beurré Clargeau. A few pears are now coming in from Guernsey and Jersey, and the Channel Island Chaumontelles, of course, are always much sought after, when they are large and well colored. The English supplies are so short as to be hardly worth a notice.

And then what of the grape? Only a day or two ago, when passing through Covent-garden market at five o'clock in the morning, amidst a flare of gas-jets, the rush of the loaded porters, the continued hubbub of the busy buyers and the shrewd salesmen, growers, and commission salesmen, we were particularly struck with the superior quality of the fine punnetted grapes especially, which form one of the most attractive features of the Christmas fruit trade at Covent-garden market. Many of these hothouse grapes were packed in shallow, flat-shaped handle baskets, telling at a glance they came from Guernsey, whilst the deeper grape baskets denoted their arrival overnight from Worthing and kindred centres. In addition were to be seen mammoth-berried Gros Colmar grapes from Soot-

THE PEACH.

land, and some choice Alicantes from the borders of Wales. The supplies also come from Potter's Bar, Finchley, Fulham, Hampton, Barnet, Acton, Tottenham, Uxbridge, and other places too numerous to mention. There are also plenty of the famous white grape, Muscats of Alexandria, on sale. Although the stocks both of white and black grapes on hand are heavy for the time of year, there will be little trouble in clearing out the bulk for the Christmas trade, and at fair prices. True, prices are vastly different to what they used to be some years back. Instead of making from ten shillings to thirty shillings a pound, traders are able to offer better grapes at from one shilling and sixpence to seven shillings and sixpence a pound, and realize greater satisfaction from the latter prices than they could from the former. The British hothouse grape is the wonder of the world. It finds its way to Paris, Berlin, and even New York, where it is sold at fancy prices by the retail fruiterers of the cities

named. There are growers in the United Kingdom who actually raise grapes in forcing houses of an estimated total length of between ten and twenty miles. The houses run from fourteen to sixteen feet in width, and literally cover acres of land. For the cheaper class of grape trade there is the Spanish Almeria, which is packed in barrels, holding from forty-eight to seventy-two pounds of fruit and cork dust combined.

The retail shops are now all ablaze, as it were, with bright colours, the colours of dainty, delicious, ripening fruits. They have custard apples from Madeira, grapes from Belgium, apples from Italy and distant California, and even oranges from the land of the Turk, telling us once again that, in addition to consuming our home surplus, which are not so light as many people imagine, to satisfy the festive appetite of the nation our merchants and distributors have to draw our supplies of Christmas fruits from almost every centre of production under the sun.

THE PEACH.

AS this fruit is a native of a southern clime, and therefore somewhat tender, we must give it all the advantage we can in the way of location and culture if we wish to succeed with it in this country. An elevation near a large body of water is preferable, with a light sandy loam, and natural drainage to the depth of ten or fifteen feet. When these conditions cannot be secured we cannot look for any great measure of success.

By planting a tree or two on the north side of a building we can often grow a crop of this fruit in sections where they would fail without the protection thus afforded. Hardy varieties should always be selected when planting outside the "peach belt." Early Barnard, Tyhurst, Longhurst, Golden Drop, Hill's Chili, and Lemon Free are among the hardiest sorts thus far tested, and all of them good kinds. In peach sections the following is a good list, named in their order of ripening: Early St. John, Early Crawford, Fitzgerald, Yellow Rare-ripe, New Prolific, Tyhurst, Elberta, Golden Drop, Longhurst, Hill's Chili,

Late Crawford, Jacques' Rareripe, Lemon Free, and Smock.

Cultivation should begin in early spring, and discontinued the first of August. This method of culture will induce early growth of wood, also early ripening of the same, which is very essential to success. At the latter date crimson clover should be sown among young trees to give a covering for the soil through cold weather, which protects the roots of the trees. Plow under in early spring and cultivate again as directed above.

The black aphid is the worst insect enemy we had to contend with thus far. They do most injury to young trees newly planted. Perhaps the best remedy we have is to treat the young trees before planting by soaking a few minutes in strong tobacco water. We take any refuse tobacco, leaf or stems, for this purpose. When this is done and good culture given there is little trouble after from this cause.

W. W. HILBORN,
Experimenter at South-western Station.
Essex Co., Ont.

ONIONS.

THE following is a portion of a paper read by the well known seedsman, J. J. H. Gregory, before the Massachusetts Horticultural Society :

As regards soil, onions will grow on any soil from muck meadows to clay loam. They succeed on soil so gravelly that after a rain there will be places a yard square on which not a particle of soil can be seen. Muck soil will not make a first-class onion without silica added in the form of gravel or sand. Two hundred loads of gravelly, gritty soil should be carted on to an acre ; otherwise the onions will be coarse, thick necked, of bad color, soft and spongy, and poor keepers. In other respects the muck may be treated like upland soils. Muck is very rich in latent nitrogen, and if manure is applied it should be bone and ashes rather than barnyard manure ; this remark will apply not only to onions, but to any crop in such soil. Thin upland soils need humus ; muck does not. A gravelly, sandy loam gives onions the straw color so much desired. Very heavy manuring gives earlier, harder and thicker bulbs and causes them to ripen all at once. To put in more manure than is really needed makes the crop so much earlier that it pays well. The speaker mentioned an instance of a Revere cultivator who by extra manuring sent sixty barrels to market in one day, which brought a far higher price than the general crop.

A weedy soil should be avoided. Old soils add greatly to the expense of raising this crop. There are three weeds which are especially injurious in an onion bed — twitch grass, purslane and chickweed. In regard to the first, money is saved by taking out every spear before planting. The soil should be lifted lightly with a

fork and the grass drawn out. Purslane is a very peculiar weed ; it not only produces innumerable seeds, but the speaker had found that every piece into which it is cut in weeding will take root. It is, however, not a tall, smothering weed, and is said to indicate land rich in potash. Chickweed is the worst of all weeds for onions. It washes over the land, and sticks to your boots, and is carried about in that way. If a bed is badly infested it is better to discontinue cultivating onions on it and try new land. Where grass land is broken up the sod should be well rotted by other crops before planting onions ; they can be raised the second year from pasture sod and in three years from mowing sod. In pasture land there are few weeds, and it will warrant a large outlay for beets, onions and similar crops. As much as seven hundred bushels of onions per acre have been raised on black muck soils without manure. Onions will follow carrots, potatoes or corn kindly, and will follow cabbages and mangel wurzel, which have drawn heavily on the soil for potash, provided an extra dressing of this element is given. Last year the speaker planted a bed, part of which had been in carrots and part in mangel wurzel the year before, giving an extra quantity of potash to the latter portion, and no difference could be seen in the crop on the two parts. It used to be thought that onions could be raised successfully for many years on the same ground, now we can get only a few crops off the same piece of ground. A deep, strong soil is best ; it should have sufficient moisture and be level or nearly so, else the wash of the land will cover the young plants. The top onion is sometimes planted in August for May marketing. The Egyptian belongs to a distinct class ; it is of

ONIONS.

irregular form, and is planted in September, and starts early in the spring—earlier than the weeds. They do not have to be planted but once. Onion seed raised here is much better than foreign; only about fifty per cent. of the latter will grow. Sets may be planted about the middle of May, three inches apart; they give a great deal of work.

In preparing the ground for onions, Mr. Gregory recommended the use of a gang plough and Meeker harrow, which does the work of raking in half the time required to do it by hand; the competition is such that we must economize in every possible way.

As to manures, onions are great feeders and like something to select from. Mr. Gregory advised applying at least ten cords of barnyard manure per acre, or its equivalent; farmers in the vicinity of Boston use twenty cords of stable manure. But he thought it better to use half the quantity of manure, and the other half in commercial fertilizers, or cheaper yet, to use all fertilizer. The latter can be applied at any period of growth, but there is danger from using a phosphate continuously. In Bermuda, the onion growers use part sea manure and part commercial fertilizers. A neighbor of Mr. Gregory uses ten cords of a mixture of barnyard manure, sea manure and nightsoil, a very concentrated manure, probably equal to double the quantity of ordinary barnyard manure. Mr. Gregory recommended the application of three hundred pounds of nitrate of soda per acre; or, if the crop looks feeble, a complete fertilizer may be used. In all farming a good deal of manure seems to be misapplied, and he suggested the use of less manure and more nitrate of soda.

In a crop of 700 bushels of onions there will be 58 lbs. of potash and 53 lbs. of phosphoric acid. A cord of aver-

age stable manure, weighing 4500 lbs., will contain 18 lbs. of potash and 22 lbs. of phosphoric acid, and 20 cords would contain 360 lbs. of the former and 440 of the latter. If this quantity of manure is applied every year for twenty five years we shall have put into the soil 9000 lbs. of potash and 11,000 lbs. of phosphoric acid. But the crop during this time will have contained only 1450 lbs. of the former and 1325 of the latter, leaving in the soil an excess of 7550 lbs. of potash and 9675 lbs. of phosphoric acid. These substances will, if the land is ploughed eight inches deep, be distributed through 227 cords of soil per acre, which would give an average of 33 lbs. potash and 42 lbs. phosphoric acid per cord, so that the whole soil would average more than half again as rich in potash as average barn manure (that is, in the proportion of 33 to 18), and nearly twice as rich in phosphoric acid (in the proportion of 42 to 22). This soil would itself have become manure, and as a dressing for grass land would be worth half as much again as barn manure. The speaker suggested using no barn manure, and nitrogen only in forms that will meet the wants of the crop as it comes along. This should be done two or three times during its growth.

There are three classes of seed sowers—the finger-stirrers, force-feeders and agitators. The speaker preferred the first two. There is one that plants two rows at a time. Two men will produce very different results with the same machine or with seed from the same bag. In Connecticut the seed is sometimes dropped in bunches, alternating with carrots; the carrots then have an opportunity to make a late growth. From three and a half to eight pounds of seed is sown on an acre; four pounds is about the usual quantity, but four and a half or five pounds may be used on new soil,

REMOVE THE OLD RASPBERRY CANES.

and from five to six pounds on very rich soil. It is important to plant early; certainly before the close of the first week in May. The rows should be from twelve to eighteen inches apart. If there are any blank spaces, they should not be filled in with tomatoes, cabbages or other large growing plants.

As to weeding, Mr. Gregory said—Be sure to weed just as soon as a row can be seen. It is a good plan to sow radish seed with the onions, that the rows may be distinguished more plainly. If two or three rainy days come, this means an extra weeding. He had tested twelve different sorts of weeders and liked the horizontal best. One kind (which he thought well of) weeds two rows at a time. There is one, called the finger-weeder, which gives the operator very complete control over his work. With a sliding weeder there is a danger of cutting or bruising the bulbs. It is an excellent plan to double slide them as we go along, first close to one row and then close to the other. They should

be weeded from five to seven times during the season.

For the onion maggot, Mr. Gregory had found hens and chickens an effectual remedy. A hen and a brood of chickens will take care of from an acre to an acre and a half. Gas lime has been found effectual, but it abounds in chlorine and must be used with care.

In harvesting green ones should not be mixed with dry ones. When most of the tops are down there is danger of their re-rooting. On highly manured land they will be ready to harvest earlier than land not so much enriched. A cultivator with a scraper attached is a good thing to clean the bed with. He freezes a part of his crop, piling them fifteen inches deep and from fifteen inches to two feet from the wall of the building, the space between the wall and the onions being filled with hay; they are then covered two feet deep with hay. They must not be touched or handled while frozen. For marketing they should be evenly assorted; many small ones cause extra loss in price.

REMOVE THE OLD RASPBERRY CANES.

SOME advocate the leaving of the old raspberry canes after fruiting—claiming that they are not only beneficial in protecting the young bushes during the winter, etc., but that their mission is not really filled during the year, holding that the next year's crop is impaired if bushes are removed before spring. Now the former claim may be all right in some locations where the winters are extreme, and where a deep snow is beneficial, as the cane will hold the snow and aid in keeping the young growth from being broken down, but the latter we cannot see. When a bush has borne its fruit and is dying off, as all strawberry bushes do, then we advise making a business of cutting out all the old canes and burning them. Do not put them in a pile or

throw into the wood lot. Why this care? To explain—Our raspberry fields were a pleasant sight to see in the early summer, but before their fruit was ready to pick, the bushes commenced to show signs of sickness, and the fruit ceased to grow, and in instances dried up. In examining the old wood we found out the cause, four-fifths of the canes were infested with the horer, from one to ten being found in each cane; these pests were in different stages of development, many ready to come out and start business on the young wood for another season, while some resemble ant's eggs. And this in the heart of the cane, of course, had taken the vitality out of the bush; it is needless to say that every old bush was speedily cut out and burned.—Green's Fruit Grower.

STONEY CREEK FRUIT GROWERS.

A VERY large and important gathering of the farmers and fruit growers of this district gathered at the Farmer's Institute meeting which was held at Stoney Creek on January 5th, 1898. Matters of interest to fruit growers were discussed by Prof. H. L. Hutt, Mr. W. M. Orr and L. Woolverton.

The latter read to the meeting a paper showing some of the results of the experimental shipments of tender fruits to Great Britain during the past season, and the prospects for the future. The fruit growers were deeply interested in this matter, and asked numerous questions regarding the English markets and the prices which can be obtained for our first class fruit, providing they can be placed there in prime condition. Samples of packages which had been used, and which were proposed for 1898, were exhibited, and after some discussion the following resolution was moved by E. D. Smith, of Winona, seconded by Frank Carpenter, M. P., and passed unanimously:—

Resolved, That we, the fruit growers and farmers of this district, are deeply interested in the success of the trial shipments of tender fruits in cold storage to Great Britain, under the auspices of the Dominion Government, and we earnestly desire the Government to

continue these trial shipments on an extensive scale until permanent success or failure is fully decided.

Further, Being convinced that shipments by individual shippers on their own account, are not likely to be made, and never can be expected to be profitably made unless an even temperature of an absolute degree is guaranteed on shipboard, therefore, we respectfully urge upon the Government the desirability of securing, if possible, from the steamship companies an absolute guarantee of the temperature somewhat within a reasonable distance of the ideal one for the purpose, say 33 to 38 for tender fruits in cold storage, if 35 to 36 is found to be the proper temperature.

Further, We are of the opinion that, if the temperature of the compartment in which winter apples are usually carried can be kept the same as the temperature outside the vessel, we would have no complaints about wasty and rotten apples upon their arrival in Great Britain. We are of the opinion that such a temperature could be secured at a trifling expense by means of fans properly constructed and worked on the voyage.

Further, We believe that, for carrying grapes to Great Britain, possibly such a temperature would be cheaper and better than cold storage, if also attended with thorough ventilation.

We also would urge the necessity of uniform and uniformly good packing of any tender fruits sent forward, and uniformity in packages used by all shippers, as we believe it would be very unfortunate if any inferior fruit should be allowed to go forward, or that a great variety of packages of various sizes and shapes should be placed upon that market.

FOLIAGE FOR BOUQUETS.

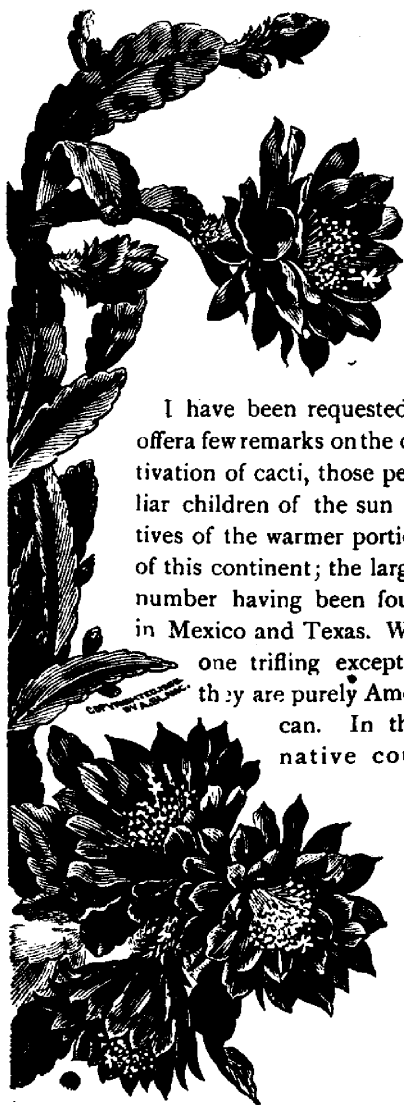
THOSE who make bouquets for themselves or others, are often troubled for want of a suitable green to work in. The rose geranium is a general favorite, but young, strong growing plants potted or planted out in very rich soil should be kept in plenty, so that you can cut freely, and as soon as the plant gets old and woody and the leaves decrease in size and rankness, throw the plant away and get a fresh one. But geranium leaves are not suitable in all places, and

something else must be had. The rank growing grasses are very serviceable though rarely used; but there is one that is worthy of a place in every garden, and that is the old-fashioned ribbon-grass. How its familiar white and green carries me back to boyhood—to my old mother's garden, and the bouquets she used to make. It will grow anywhere, but will amply repay you for a rich soil and plenty of water.—Vick's Magazine for November.



✧ Flower Garden and Lawn. ✧

CACTI.



I have been requested to offer a few remarks on the cultivation of cacti, those peculiar children of the sun natives of the warmer portions of this continent; the largest number having been found in Mexico and Texas. With one trifling exception they are purely American. In their native coun-

tries they grow under very varied conditions. The Phyllocactus and Epiphyllums are Epiphytes or Air plants growing on trees without any soil, the wet ground and tropical heat furnishing the necessary moisture. Here they will not grow as air plants but thrive in sandy soil, while the Epiphytal Orchids found in the same localities can only be grown in moss instead of soil and in warm moist conservatories. Nearly all the other varieties of cacti grow on barren sandy plains or in crevices of rocks, in localities where the heat of the sun is intense and the rainy season short. Botanists tell us that the skin or bark of cacti has very few breathing pores, resembling in this respect the skin of apples, pears, plums and other fruits so that they absorb the water through their roots during the rainy season, and enjoy the strong heat where plants with soft porous leaves could not live.

Growing under such different conditions the problem with cultivators has been to find the most suitable soil to grow them in, and the opinions have been nearly as numerous as the cultivators, and as they have done well in very different soils I think we may conclude that they will grow in any soil if sufficiently open and porous so that water may pass freely, water-logged soil being certain death to cacti. I have found sods from a sandy knoll suitable, by

CACTI.

paring off the grass the under part is a net-work of fine fibrous roots in sandy loam in which they thrive. The strap leaved varieties can have some leaf mould added as they can stand richer soil. Formerly cacti were kept in pots the year round, but now nearly every one plants them out in summer. Mix the ordinary garden soil with an equal quantity of sand, and have the situation elevated so that water will run off. They enjoy the sun and rain and the growth they make is surprising. Their fresh healthy appearance is a contrast to the shrunken specimens in pots. Phyllocactus when planted out enjoy the heat, but should be shaded from direct sunlight which is apt to scald and burn them. Regarding the different varieties, these are so numerous and varied that time will only permit the briefest mention. The Phyllocactus the flat or strap leaved spineless family are the best known, easily grown and generally most satisfactory. Some are day and others night bloomers, and all are very floriferous. The variety Latifrons, or the Queen cactus is one of the best when a good size can be depended on for plenty of flowers every summer. They are pure white, six inches in diameter, fragrant, opening

at night and closing next morning. This plant is often wrongly called "The Night Blooming Cereus," which is an entirely different plant, it is *Cereus*

Grandiflora of a semi-climbing habit with rope like stems, seldom thicker than a man's thumb, having four to eight slight angles or ridges. The flowers are ten inches in diameter with a rich perfume, but while this plant is very easily grown and largely used to graft other varieties on, flowers are very rare, so that *Latifrons* is a

much preferable plant to grow. The *Epiphyllums* or crab or lobster cacti are easily grown, and profuse bloomers in February and March, being of a rather drooping habit they are improved by being grafted on the *Pereeskia* stock, or on some of the *Cereuses* and make handsome umbrella like plants and less liable to damp off at the neck. The *Cereus* are a large and very varied family, from the creeping *Flagelliformis* or Rat tail up to *Cereus giganteus* fifty to seventy feet high in a straight unbranched column, all are easily grown and mostly free bloomers.

There is a subsection of which *Pilocereus senilis* "The old man Cactus" is the best known representative being covered with long white

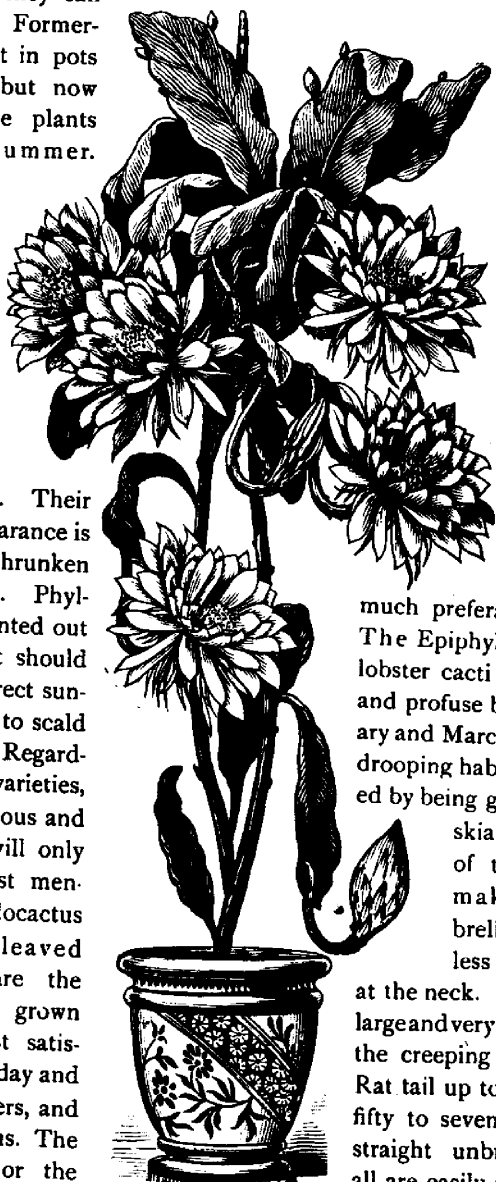


FIG. 1288.—PHYLLO-
CACTUS LATIFRONS



FIG. 1289.—NIGHT BLOOMING CEREUS.

hairs. It is one of the wonders of plant life, I have never heard of its blooming and think a flower on it would be an incongruity. Of the round spiny Hedgehog cacti there are various families and numberless varieties, nearly all are free-flowering, and their various colored spines make them handsome plants when not in flower. The Opuntia family are excellent bloomers, the great drawback to their cultivation is their spines which are very fine and slightly barbed so that they pierce the skin

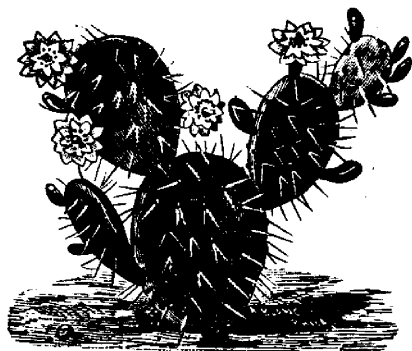


FIG. 1290.—OPUNTIA.

readily and are painful and difficult to remove. In districts where they live outside, and do not require handling, they make magnificent display of brilliant flowers, a clump in bloom is a sight worth going to see. The conditions necessary to success in growing cacti are more easily provided than for most other plants, and may be briefly summed up as follows. Sandy porous soil, small pots, all the sunlight and heat possible in summer, with plenty of water, but cool and dry in winter. If the temperature is over 50 degrees in winter they require some water to prevent drying out altogether, but not sufficient to start growth, they require to rest.

As a class they are not much troubled by insects or subject to disease. The mealy bug is about the only troublesome insect, and for that spraying with alcohol is a certain remedy.

Rot is caused by over watering as soon as seen cut off the decayed part back to the fresh, lay in the sun for several day until the cut has cal-

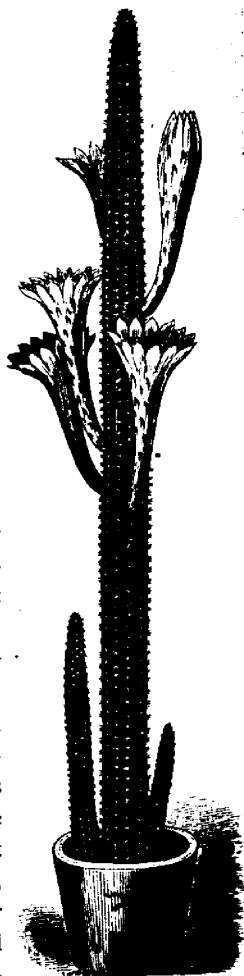


FIG. 1291.—CEREUS.

PLANT FOR DINING TABLE.

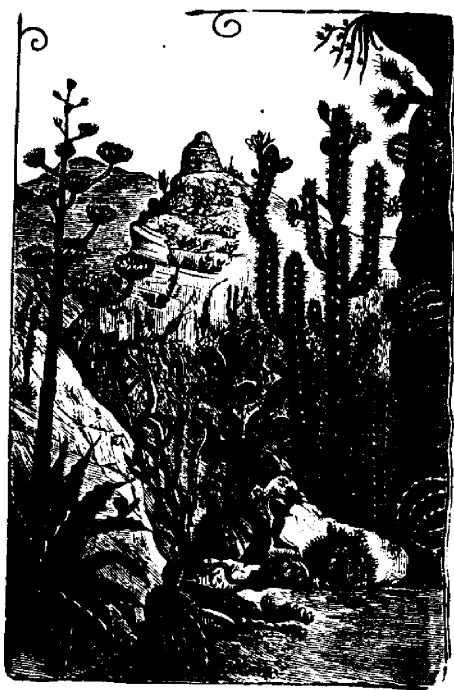


FIG. 1292.—CACTI IN MEXICO.

loused, then insert in sand, but not deeply. Keep shaded and slightly moist until roots form, than replant in proper soil. This is the common method of propagation by slips or cuttings.

I trust these remarks may increase the interest in this curious and beautiful class of plants, as I am certain every one will be delighted in growing a few cacti.

JAMES LOCKIE.

GLADIOLI FROM SEED.—In spite of all that has been written, few amateurs seem to understand how easily and successfully blooming bulbs can be produced in a single season. The question of seed is of great importance, as practically all the seed offered is from self-fertilized flowers, giving varieties of so little individuality as to rarely reproduce characteristic flowers. For the grower of a few packets of seed, there is no better way than to sow it in a pot of sifted sandy loam, made richer in the lower strata, to be ready when the plant most requires it. Cover lightly and sift on more if needed, as the bulbs are formed one inch and more below the level on which the seed is planted. Keep shaded until the blades appear, about twenty days, but do not interfere with the circulation of air. The pot may then be plunged in full exposure to the sun, in the cold frame or open ground, and kept well watered during the period of active growth, about four months being necessary to develop the corn. By sowing the seed in October under glass and ripening off in March, with a rest until May and a summer in the open ground, larger bulbs can be produced and a season saved.

H. H. GROFF.

PLANT FOR DINING TABLE.

THE Rural New Yorker commends the feathery little palm *Cocos Weddeliana*, as the best for permanent use on the dining table. A plant in a four-inch pot, stippled into a pretty jardiniere, makes a very attractive ornament, and, when more elaborate decoration is desired, it may be used as a centerpiece for ferns or flowers. It has a very light and graceful appearance, yet it stands the conditions of an ordinary room very well. Do not take it out of the ordinary red earthenware flower-pot and plant it directly into the jardiniere, because the infallible result will be poor drainage and sour soil,

causing damage to the roots. A covering of green moss, put over the top of the soil, will improve the appearance, and also prevent the earth from drying out so rapidly. The foliage should be well sprayed or sponged every week.

A cheap but attractive plant for the table is the showy variegated Wandering Jew, *Tradescantia zebrina*, which grows rapidly under unfavorable conditions. Small plants of the Silk oak, *Grevillea robusta*, are excellent for the same purpose; their prettily-cut leaves are very graceful, and the plants bear rough usage with equanimity.

WORK IN THE GREENHOUSE.

THE principal work the coming month is to guard against frost. There will be much dull weather, and the fires must be kept up to do the work of the sun as far as possible. When it can possibly be done, air should be given, a little at least every day. Let your plants grow slowly; don't attempt to force them too fast or the growth will be weak and inferior. Great care should be exercised in watering. It is best generally not to use the hose at this season, but to go over the plants with a watering pot and water when the earth appears dry. Sub-irrigation is, of course, the best for most crops.

Should the green fly appear, apply tobacco, either the liquid or by fumigation. After a spell of dull weather, when the hose has been withheld, the red spider will sometimes get a hold. When a bright day comes, thoroughly wet the walks, which the sun's rays will cause to steam; this moisture is sure death to the mites. If you heat by steam, fill your house when the sun begins to shine and the effect will be to destroy every red spider.

Look over the bulbs that were potted in November and December, such as tulips, hyacinths, lilies, etc. Those that have filled the pots with roots may be brought in. Put them at first in the coldest part of the house, where the temperature will not go above 45° if possible. After a week, and the foliage

has taken its green color, heat may be increased until the night temperature is 65°. Water as much as the plants require. If care is taken for a few weeks their abundant bloom will amply repay us. At this time of the year dealers often offer bulbs at very low prices. My advice is not to buy them; their vitality is dried up and it will cost you more to restore them, adding your time, than you can sell the flowers for.

It is high time plants were under way for Easter. Lilies should be above the pot. Dormant roses can be flowered in pots. Geraniums should have a shift and be given more room; they will make fine plants for Easter.

All kinds of bedding plants can now be propagated. Protect the cuttings from the sun. Keep your plants growing. As fast as "slips" appear, propagate them.

Seeds of petunia, pansie, hollyhock, canna, marguerite, carnation, tuberous begonia, centaurea gymnocarpa, coleus, dahlia, heliotrope, lobelia and vinca should be started soon.

If your cuttings damp off, it is generally because of a fungous disease that often is found in beds that have been used. After a batch of cuttings has been taken out, water the bed with an ammoniacal mixture made as follows: Carbonate of copper, 5 oz.; ammonia (26°), 3 pints; water, 45 gallons.—W. F. GALE, in Amer. Agric.



PLANT PESTS IN THE WINDOW GARDEN.

GREEN aphids, black flies, white worms and neutral tinted slugs are an assured nuisance to the window gardener, whether considered individually or collectively. Just how to dispose of this artistic quartette is often a problem outside of greenhouses, for living rooms are not open to the wholesale treatment given elsewhere. For a light attack of verdant lice, hand-picking and frequent showering is often all that is necessary, especially if tar or tobacco soapsuds are used in the sprinkler.

But when the vermin lie thick on vein, crevice or fold, tobacco fumes alone are equal to the occasion; the smoke, however, must be confined, or it is of little use. I often group a number of afflicted plants on a table, closely covering the same with newspapers, cone fashion, leaving space at the bottom to introduce the smoke; a cigar or two may be thus

comfortably utilized, or the tobacco may be burned on coals if due precaution is used. The paper should be left on 24 hours to prevent possible resuscitation of the narcotic victims.

The black flies and white worms are more closely related than appearance or habit would indicate. If the soil is badly infested it is well to repot the plant if it is small, but the larger growths will not bear having their roots shaken free. A teaspoonful of saltpetre in a quart of water used at intervals of a few days speedily lessens and eventually quiets the pests and serves as a fertilizer as well. Hand-picking is first in order for the slugs, which never in life or death relax their hold. I found a maidenhair fern thus infested, and after clearing the stipes I showered freely with whale oil suds, and have not since been troubled.—G. T. WOOLSON, Vermont, in American Agriculturist.

THE WINDOW GARDEN.

The window garden is a busy place from now on until plants can be put in the cold frame or their permanent places in the garden. To start seedlings, flats or boxes of convenient size are generally used. These are about three inches deep, filled to within half an inch with soil that has been sifted and is half sand. Firm this down well, scatter the seeds thinly, press them into the soil, then scatter a little fine, sandy soil over them, just to cover the seeds, and water with a fine spray. These may be placed in any convenient warm place until a little green begins to appear, when they should be removed to a strong light, but not into the sunshine, until they have

strength enough to stand without wilting. As soon as the fourth leaf appears, the seedlings should be transplanted into larger boxes, kept shaded a day, then kept in the full sun unless it is very hot. Keep them as close to the glass as possible, to avoid their being drawn. We have used seed pans, as florists call them, and also six or eight-inch flower pots, with good success. We like them better than boxes, especially for fine seeds, for if kept standing in saucers of water, the seed will germinate better than when water comes entirely from the top.—American Agriculturist.

Our Affiliated Societies.

THE ANNUAL MEETINGS.

On the 12th ult., the Horticultural Societies held their Annual Meetings for the election of officers as required by law, and we are pleased to note the excellent success attending their work in 1897, and the sound financial condition in which they enter the year 1898. This is in contrast to the showing of many of the old style societies whose many premiums were carried off by a few, leaving the rest of the members without benefit, and the treasury in debt. We will publish full reports of each in the annual report now going through the press, if received promptly, and in the journal simply give names of president and secretary for the new year.

WOODSTOCK.—This society is a live organization, which unlike the flowers and other horticultural departments they discuss, flourishes alike in winter and summer. The report submitted by the Secretary, James S. Scarff, at the Annual Meeting held recently, showed a balance in hand of \$71.70. The meeting was fairly well attended notwithstanding the disagreeable nature of the evening. The President for 1898 is Mr. D. W. Karn, and Secretary-Treasurer, Mr. J. S. Scarff. A letter was received from Mr. L. Woolverton, Secretary of the Provincial Society, regarding a lecture on horticultural topics, and the Secretary will ask that he be sent on March 15.

The satisfactory surplus on hand led to the suggestion that the plant distribution offered this year be the best that can be procured, with the view of holding out an attraction for new members. A committee was appointed to report on this at the next meeting. A comprehensive report of the meeting of the Ontario Fruit Growers' Association at Waterloo, was given by Mr. Scarff, and proved a very interesting feature of the evening.

HAMILTON.—At the meeting of the promoters of the Hamilton Horticultural Society on the 12th, Mr. A. Alexander, was elected President, and on the 14th inst, Mr. J. M. Dickson was appointed Secretary.

ORANGEVILLE.—A very harmonious and enthusiastic meeting was held in the Council chamber last evening for the organization, when Mr. John McLaren was elected President and Wm. Judge, Secretary-Treasurer. Mr Judge writes, "The members are very

much pleased with the HORTICULTURIST, and are all speaking in loud praise of the January number."

MEAFORD.—Mr. O. Boden, President; A McK Cameron, Secretary-Treasurer.

OWEN SOUND.—On Wednesday, the 12th ult., there was formed here a Horticultural Society, in accordance with the Act. We have over fifty members, and purpose to affiliate with the Ontario Society. J. H. Packham, Secretary.

SARNIA.—The first meeting of the newly organized Horticultural Society was held on Wednesday evening, Jan. 12th, in the Police Court room, Town Hall. The officers were then appointed for the present year; and Hon. A. Vidal was made President, and T. J Gordon, Secretary.

HAGERSVILLE.—At the annual meeting Mr. Wm. Harrison was elected President, and S. W. Howard, Secretary-Treasurer.

OAKVILLE.—The first Annual meeting of the above Society was held on Wednesday, Jan. 12th. The society starts with 95 members, and there were over 70 present at the annual meeting. Mr. Geo. A. Jacobs was elected President, and Mr. W. W. Paterson, Secretary-Treasurer. It was decided to meet monthly, on the first Saturday of every month.

THE DURHAM SOCIETY has done well for its members in 1897, considering that it has only been in existence one year. Here is a paragraph from the Director's report:—

The members obtained, during the past year, through the Society: 16 flowering shrubs, 60 pear trees, 62 papers garden seeds, 111 tubers, 433 house plants, 472 small fruit bushes, 491 papers flower seeds, 504 lbs. field seeds, and 4,319 bulbs of various kinds. A grand total of 6 468 articles. The O. F. G. Association gave 132 of these as premiums of membership, members purchased 1,334, and the Society presented to its members the remaining 4,902.

The Secretary is Mr. Wm. Gorsline.

PARIS HORTICULTURAL SOCIETY.—During the past the meetings of your Directors have been well attended, in no case have they had to adjourn for want of a quorum.

The series of lectures arranged for did not result as it was hoped they would, so far as attendance was concerned. The lectures themselves, delivered as they were by some of the most talented men in that line, in Ontario, were excellent, being interesting and

OUR AFFILIATED SOCIETIES



FIG. 1293.—NATURAL STONE SEAT ON THE LAWN OF MR C. H. ROBERTS, PARIS.

instructive. The exhibit of apples at Prof. Pantou's lecture, at so late a season, was remarkable. Twelve entries being made, of fruit, in nearly every instance in prime condition. Remarks were made by some, that the exhibits in some cases, were not, very possibly, all grown by the exhibitor. I replied to this when asked, "The object we had in view was not competition between individual orchards so much, as a desire to ascertain what fruit of the apple family could be kept through till that time of year with the ordinary means of storage. Favorable comment was received from the Ottawa Experimental Farm as to the value of this exhibit.

The flower beds laid out by the society in the front of the High School, and filled with perennials, almost filling all the space the first year, and quite sufficient when they have had a year or two of growth, have been a source of pleasure to both teacher and scholar as well as adding to the beauty of the grounds and an object lesson to the passer by.

A bed, 16 feet in diameter, was laid out in King's Ward Park, by the Town Council, and filled by the Society with foliage plants and cannas. Owing to lateness and coldness of the spring weather, we were not as well

pleased with the result as might be for a time, but when seasonable weather came nothing but words of praise were heard by your Directors.

The Cemetery flower beds was again this year a matter of general congratulation: from remarks and enquiries the writer has heard made, the result to the general public has been educative, and a source of both pleasure and profit.

This year your Directors have been generous enough with the North Brant Agricultural Society to assume the whole of the exhibit of flowers, hoping in some measure to add to the efficiency of this part of the exhibit. The display this year being larger, better, and more conveniently arranged for inspection, the desire of the Directors of your Society has been largely gratified.

The committees appointed to select premiums for the ensuing year have named gladioli, Queen Charlotte cannas, aster seed and sweet peas. The intention is that each of the members shall have some of each of these. I may be allowed to remark perhaps, that a competitive exhibit of the result of the culture of these during the season would be of some interest.

A FRUIT PACKING HOUSE.

An offer was made the teachers of the High and Public School that prizes, of the value of \$3, \$2, and \$1 would be given by your Society for the best essay on some subject relating to horticulture. The reply received by your Secretary was that owing to the schools having been closed for a time through an epidemic of measles they regretted having to decline the proposal, as the time necessary for preparing for the examinations would not be sufficient.

The flower bed in King's Ward Park has been filled with the bulbs from the cemetery for spring flowering and tulips only in assorted sections substituted in the cemetery. Our display of spring flowering bulbs in this place, held so sacred by many of us, has encouraged the Cemetery Committee of the Town Council to fill two other beds with crocus snowdrops and tulips, and possibly next season they will not object to assume the whole display and

thus relieve us of this source of expenditure, and in this way give us an opportunity of expending our money in other directions.

Your Secretary was invited to attend a meeting of the Directors of the North Brant Agricultural Society, and when asked to address them stated the desire of the Paris Horticultural Society was to work harmoniously with them, believing there was work to be done by a separate institution of this kind not in their line exactly and yet recognized by the Agricultural and Arts Act. An attentive hearing was given and many questions asked: the assurance being given that their desire was to work together courteously and harmoniously.

All of which is respectfully submitted,

C. H. ROBERTS,
Secretary.

Paris, January 12th, 1898.

A FRUIT PACKING HOUSE.

NOW that we are likely to open up an important export trade in Canadian fruit, a suitable packing house is an important consideration. Mr. Theoron Woolverton, who is near Riverside, California, harvesting his crop of oranges there, writes:—"I have been unable to get the proper plans of an orange packing house,

but there are no special features beyond those of room and light. I enclose you a rough sketch of ground plan.

Packing house floor on a level with wagon cars and about level with wagon platforms, length of packing house 160 ft., width 80 ft., grader about the centre of the house, windows numerous and several large skylights in the roof. The

rear compartment is for boxes and box material with two windows or rather doors for loading on to the wagons. The covered platform extends the entire length of the packing house on the railroad side and entire width on the receiving side, large scales just inside the receiving door.

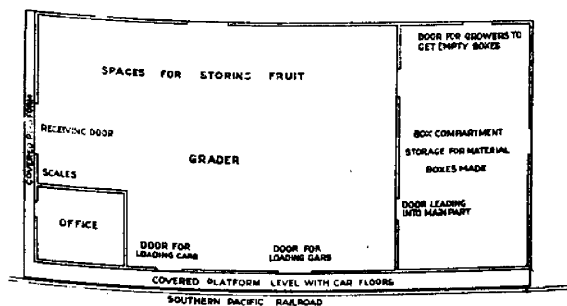


FIG. 1294.—PLAN OF FRUIT PACKING HOUSE.





The Canadian Horticulturist

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

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

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

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

➤ Notes and Comments. ◀

SAN JOSE SCALE.—We are publishing the full text of Mr. Dryden's San Jose Scale Act. It makes it illegal for any one to import or plant infested trees, and takes power to inspect all orchards and destroy all such trees wherever found, allowing the owner a quarter of their value as assigned by the inspector. It is estimated that about 3000 trees in our Province are affected, and must be immediately destroyed, in order to stamp out the pest. This will be the work of the Province. Then it will rest with the Dominion to pass an Act that will prevent the introduction of any more infested fruit or fruit trees from the United States, for unless the action of the Local House in stamping it out, is sustained by the Dominion in keeping it out, all our efforts will be vain.

Whole groves of forest trees have

been destroyed in some sections of the United States we have been informed, as the only sure method of checking the spread of the San Jose Scale. A parasite is said to have been found in California preying upon the scale internally; it is known as *aphelinus fuscipennis*, a formidable enough name to frighten any insect. It is said that in California this parasite increases so fast that it holds the pest in check. Whether it would do the same for us in Ontario is yet to be proved.

A NEW COLD STORAGE SCHEME.—We are much encouraged with the prospects of improved accommodations next summer, for the export of our valuable fruit products. The great American Cold Storage firm of Perkins & Weber, Chicago, propose to build a great central cold storage depot worth about

NOTES AND COMMENTS.

\$200,000, perhaps at Montreal, whence fruit would be loaded for Great Britain. Branch depots are to be provided through the country, and special refrigerator cars. Should this plan be fully carried out, it will much facilitate our export trade.

A SWINDLE.—Mr. A. W. Milne, of Ottawa, writes that in 1892 he purchased from a New York State Nurseryman, six Kings, four Wallbridge, two Yellow Transparents, and two Golden Russetts. The Kings proved to be worthless crabs, the Transparent and Wallbridge miserable little seedlings, samples of which he sends in a tin box, Jan. 14th!

He writes, "It is not the value of the trees I care about, but the loss of time, ground and labor; and I certainly think a continuance of such methods should be stopped if possible."

Our readers should always be careful to place their orders with reliable nurserymen, who have a reputation to sustain. Swindlers abound in every business, and in nursery stock there is a special opportunity, because the cheat cannot be proved for years, and then it is difficult to obtain redress.

THE COUNTESS OF WACHTMEISTER condemns meat diet for either animals or plants. In an interview recently she stated that she was sure the curculio, and codlin moth in the fruit was a result of feeding the trees with animal fertilizers! Surely vegetarianism has gone mad.

IT PAYS TO SPRAY.—This statement is well proved by the report published in a recent special bulletin from the Department of Agriculture, giving the results of the work done in twenty-nine orchards in various parts of the province. At the close of the season written reports

were asked for from the persons whose orchards were treated, and these reports are so conclusive concerning the results that we extract two or three for our readers benefit.

Mr. E. E. Luton, St. Thomas: "In reply to yours of the 3rd, I may say that I consider spraying a most decided success financially. The spraying in my orchard, as conducted by W. M. Orr, superintendent of the experimental spraying, was very instructive, and in some cases very great interest was taken by those in the neighborhood that had orchards to spray. The applications were to have been seven times, but owing to the trees being in blossom only six were made, beginning on April the 20th, and finishing on July 8th. Although the first part of the season was wet and unfavorable the results were good. The varieties sprayed were: Ben Davis, Spy, Greening, Talman Sweet, Fall Pippin, Seek, Blenheim, Russet, and pears. The result on pears was not satisfactory, but on apples was a most decided success, but was more noticeable on Greenings and Spys. Out of the orchard, which only has 93 trees, and 11 of them sweet, I sold 60 bbls. and reserved 10 for my own use, and yet have about 25 bbls. of second-class, or culls. My apples, for quality, were unsurpassed in this section, taking 6 firsts and five second prizes out of 13 entries at the Fall Fair. I received \$2.50 per bbl., which was 15 cents above any others in this section—the majority selling at from \$1.50 to \$1.85 per bbl.

"In regard to profit per tree, may say that I cannot at present give definite information, but think I am quite safe in stating fully twice as much money was obtained from the sprayed trees as from the unsprayed. On the latter the apples were scabby and about the size of walnuts, while the foliage turned brown and fell off fully five weeks in advance of sprayed, and this year's spraying may have a very great benefit on next year's produce.

"Apples in this section were such a poor crop that people in passing the orchard were quite often heard to say that spraying must pay, as the sprayed orchard was the only one with any apples in that they had seen in all their day's drive. Many walked through the orchard and compared the sprayed with the unsprayed."

Mr. Norman McPherson, Kincardine: "The spraying of the apples was of great benefit, so much so that I intend to continue it myself. The fruit is larger and better formed and the Snow apples are almost free from spots. Had the weather been better the results might have been still more satisfactory. As to the trees sprayed, I could perhaps illustrate the cash benefit to me. The Snow apple trees that were sprayed have realized in fruit this year \$4.00 each; those not sprayed—nothing—as the fruit was hardly worth picking. All the other varieties sprayed were greatly improved, but not to the same

NOTES AND COMMENTS.

extent as the Snow apples. The Northern Spys, for instance, were fully fifty per cent. better through the spraying. A large number of fruit growers in this section are now in favor of spraying, and the visit of the officers sent out by the Department has been the means of conferring a great benefit upon all owners of orchards."

Those wishing further details should write C. C. James, Department of Agriculture, Toronto, for a copy.

CANADIAN PEARS.—On page 463 of last volume, Beurre d'Anjou were quoted at 15/ for 54 pears in Glasgow. It should read, "for fifty-four pounds of pears."

THE QUEBEC FRUIT GROWING SOCIETY has appointed a committee on fruit experiment stations. It is thought that four stations might cover the Province.

THE CONRATH RASPBERRY seems to be a vigorous grower. Mr. A. C. Papi-neau, of Montreal, writes:—"The Con-rath bushes sent me last spring have done very well. One has grown to the height of six and the other to eight feet, and has given two bunches of good fruit."

COLORADO BACK GARDEN. — Our friend Mr. Groff writes to call attention that this garden is decorated with his gladioli, and that the spike Dr. Gates is holding in his hand is one of the now noted Groff hybrids, and Dr. Gates is corresponding for a large increase in his favorite flower, for 1898. "Canada still leads."

THE NIAGARA FRUIT GROWERS have appointed Mr. William Black of St. Catharines, a delegate to Ottawa, along with our Committee, *re* a Dominion Act restraining the importation of plants from those states where San

José Scale is known to exist. The Ontario fruit growers have sent four delegates, viz., W. E. Wellington, A. H. Pettit, M. Burrell, and E. D. Smith.

TOMATOPOTATO.—A reader has sent us a clipping concerning a so called great discovery that the tomato vine may be grafted on the potato top, and thus we may thus grow a crop of potatoes and one of tomatoes on the same ground, at the same time. The writer thinks that in France, where ground is scarce, the discovery may be of great utility. We doubt it very much, for the labor of grafting would be very expensive.

A COMMITTEE *re* SAN JOSE SCALE interviewed the Minister of Agriculture, on Tuesday the 25th. In response to their demands for prohibition of the importation of affected nursery stock, the Minister said that the United States had prohibited the export of such trees. However he would consult with his colleagues and do everything in his power to protect the interests of the fruit grower.

SPRAY FOR SAN JOSE SCALE.—At our Waterloo meeting Prof. Fletcher said, "All the best experiments have shown that the best treatment is to spray the trees in the autumn with kerosene emulsion—the mixture of two gallons of coal oil with one gallon of soap suds, churning them together till the mixture is of a creamy nature, which takes five minutes, and then mix that with from four to six times its quantity of water. This should be sprayed over the trees as soon as the leaves fall. Then in the spring before the new growth begins those same trees are to be sprayed with whale oil soap, of the strength of two pounds in one gallon of water.

✎ Question Drawer. ✎

Treatment of Azalea.

972. SIR,—Could you give us a good article on growing the Azalea indica, say in the January number. We have distributed 110 this season. If you will reply you will oblige the Lindsay Horticultural Society.

F. J. FRAMPTON, *Secretary.*

We cannot do better in reply than to quote from Nicholson's Dictionary of Gardening :

"Thorough drainage is essential, and a compost of half peat, the other half made up of fibrous loam, leaf soil and sand, in equal quantities. They cannot have too much light and air, and may be grown to almost any size by shifting from one pot to a size larger.

"In re-potting, the whole of the crocks should be taken away from the base of the ball of soil roots, and the top should also be removed till the fine roots are reached. The plant should then be placed in the new pot, and the additional soil rammed firm, in order to prevent the water running through it, and thus depriving the plant from any benefit therefrom. In all cases the roots near the stem must be above the soil, so that the water may not sink in next the stem, or death will most certainly ensue. After potting for a few days, the plants should be kept close and freely syringed, as the growth is completed, they may be well hardened off. The best time for potting is after flowering, before the new growth has been made. From October to June the plants should be in the house, and during the other months in a cold frame, or plunged in pots in the open; or what is preferable in favored localities, planted out in prepared beds; they will thus be kept cleaner, and the growth will be much superior. In autumn they may be lifted and repotted, placing in a shady position for a few days. Water in abundance must be given throughout the blooming season; and the plants must, on no account, be allowed to become dry. At the same time a proper amount of care is most essential, as an excessive amount of moisture is equally as fatal as drought."

Earth Worms.

973. SIR,—A part of my lawn is being taken possession of by a sort of grub commonly spoken of as fish worm. In the dry months of summer it is a toil instead of a pleasure to mow the grass, owing to the countless small elevations. As the lawn is yet uncovered, kindly suggest a remedy for early

application in order to stamp out the invasion.

CHAS. T. NOECKER, M.D.,
Waterloo, Ont.

Grapes for British Columbia.

974. SIR.—I have a small garden around my house. What is the best kind of grape to plant? Grapes are not a success here because we do not have sufficient sun to ripen them.

E. DENTON, *Vancouver.*

We would advise trying Campbell Early, Early Victor, Lindley, Moore's Early and Concord.

Sacred Lily.

975. SIR.—Would you tell me what to do with the Sacred Lily? Mine has just finished blooming. Is the bulb any use the second year?

JANE S. LANDER, *Port Hope.*

Reply by Webster Bros., Hamilton.

We think your correspondent will find the bulbs of the Sacred lily of no further use. Our climate here does not seem capable of bringing these bulbs to perfection, when planted out there seems to be no increase or improvement in the size of the bulb. We should be pleased to hear if other parts of the country are capable of growing the Chinese Sacred Lily.

Growing Roses in the House.

976. SIR.—Please give me some information regarding the culture of roses in the house. I have three thrifty plants (one the Marechal Niel). I have had them since early spring, and have no blooms yet, though they grow steadily, and are over a year old. I have been using a liquid fertilizer, made by pouring boiling water on well rotted cow manure. They are free from insects, and I can see no reason for their not blooming.

B. K., *Trenton.*

Reply by Webster Bros., Hamilton.

Your correspondent has, we judge,

OPEN LETTERS.

some varieties of roses that are not very well suited for winter blooming. *Marechal Niel*, which she mentions as one of the varieties, flowers well in a conservatory when it has attained a good size, but for house culture it would not be among our first choice. The highest class of roses for winter flowering are, *Perle des Jardins*, *Bride*, *Bridesmaid*, *Kaiserin Victoria*, *Sunset*, etc., commonly known as florists roses. Some of these when given ordinary house culture give much fewer bloom and of inferior quality to those produced in green-houses. Some Tea roses, though splendid garden decoration, refuse absolutely to be forced. The following varieties thrive almost anywhere that the geranium will, the flowers are not of the best quality, *Snow Flake*, *Hermosa*, *Agripina*, *Roi de Cramoise*, *Clothilde Souperb*, *Champion of the World*. Try the plants in a little more sun, if possible, and higher temperature, to induce freer growth.

No Scale in Canadian Nurseries.

977. SIR,—I set out one hundred peach trees last spring, and I think of putting out the same number next spring. I was told by a fruit tree agent not to buy from the _____ Nursery, as they had the *San José Scale* there. Would you kindly inform me whether this is correct or not? It is reported that the *San José Scale* is in some of the orchards in this vicinity. I got a half dozen peach trees a year ago from a nursery near Toronto. A lot of the leaves curled up and fell off, but of the lot I set out last spring I did not notice anything of it amongst them. I do not know what nursery they came from, but the trees seem healthy and doing well. I was pleased to see such good reports of your annual meeting. I was sorry that I could not be present, in future I hope to be able to take advantage of these meetings.

T. B. MILLAR. *Kincardine*.

Agents will resort to all kinds of schemes in making sales, and this is a sample. No *San José Scale* has yet been found in any Canadian nursery, and we hope it never will. Our correspondent may therefore purchase with perfect confidence from any of them.

* Open Letters. *

New Fruit Crate.

SIR,—I have patented a fruit crate that I think will answer the purpose of shipping fruit better than a basket or barrel; the crate will be in proportion to hold a bushel, divided into two halves. Three of them will take up less room than a barrel and will be lighter; it will do to ship any kind of fruit, viz. :—apples, cherries, plums, oranges, tomatoes, peaches, pears, or any other kind of fruit. I claim the fruit will keep better and that I can ship one-tenth more fruit in the same room with my crate than with the barrel or basket. The crate will be strong, durable and cheap; the stuff to make the crate can be cut at any mill at the rate of about three cents per crate; it can be shipped in pieces of about 10 000 in a car, and can be put together by the fruit shipper. A boy can put 100 crates together in a day. There will be no risk of jammed or damaged fruit, and the crate will be better for the market, for the public can see what they are buying. If my crate should be worth consideration, please let me know.

WM. STAPLEY,

Lot 8, Con. 10, *Bardswille, Ont.*

The San Jose Scale.

SIR,—It is of great importance that the truth should be known as soon as possible with regard to the actual extent to which our Canadian orchards have become infested with the *San José scale*. There are at least two other kinds of scale insects which resemble the *San José scale* so closely that it requires some experience to distinguish them from it. The exact identification of these is of importance, because these two scales, the "*Putnam*" and the "*Forbes*," are very much less injurious than the true *San José scale*. I shall be pleased to examine and report direct, as well as through the *CANADIAN HORTICULTURIST*, upon any specimens which your readers may send me for that purpose. All specimens and accompanying letters may be sent to me FREE OF POSTAGE, if addressed "*The Entomologist*," Central Experimental Farm, Ottawa.

All packets should bear the name of the sender.

J. FLETCHER.

LONDON MARKET FRUIT AND VEGETABLE MEASURES.

Japan Plums in Quebec.

SIR.—Two years ago last spring I planted in Valois, near Montreal, one plum tree (Burbank) and one (Abundance), which I had obtained from Rochester, N.Y. Burbank did well the first season, but started only weak shoots the next spring. Abundance was doing very well all the summer of 1896, and started a fair crop of leaves in May, 1897, which soon faded. I pulled out the tree and noticed that the roots had been winter-killed. I am inclined to think that if grafted on our native red plum roots, they might stand our severe winters.

A. C. P., Montreal.

A Good Season.

SIR.—We have had one of the best fruit

seasons ever experienced in British Columbia, and apples, which have not done especially well in the lower country before, have this season yielded excellent crops and are retailing at from 65c. to \$1.50 per forty lb. box. Early plums sold from 4c. to 6½c. per lb. wholesale. 2nd early 2½c. to 3½c., late and small varieties like Green gage and Lombard, from 1c. to 2c. per lb.

M. J. HENRY,

Vancouver, B.C.

Reports of Plants Distributed.

SIR.—I have fruited the Green Mountain grape twice. It has proved hardy, ripens early, good flavor and very prolific.

T. GOBLE,

Near Port Sandfield, Muskoka.

LONDON MARKET FRUIT AND VEGETABLE MEASURES.

NOW that we are beginning to place our Canadian fruits on the British market it is interesting to know something about the packages and measures used in that country. We can thus better understand the market reports which we receive giving prices of fruits in England:

These measures being made either of wicker-work or deal shavings, vary triflingly in size more than measures made of less flexible materials.

Seakale Punnets—Eight inches diameter at the top, and seven and a-half inches at the bottom, and two inches deep.

Radish Punnets—Eight inches diameter, and one inch deep, if to hold six hands; or nine inches by one inch for twelve hands.

Mushroom Punnets—Seven inches by one inch.

Salading Punnets—Five inches by two inches.

Half Sieve—Contains three and-a-half imperial gallons. It averages twelve and-a-half inches in diameter, and six inches in depth.

Sieve—Contains seven imperial gallons. Diameter fifteen inches, depth eight inches. A sieve of Currants twenty quarts.

Bushel Sieve—Ten and-a-half imperial

gallons. Diameter at top seventeen inches and three quarters, at bottom seventeen inches; depth eleven inches and a quarter.

Bushel Basket—Ought, when heaped, to contain an imperial bushel. Diameter at bottom ten inches, at top fourteen inches and-a-half; depth seventeen inches. Walnuts, Nuts, Apples, and Potatoes are sold by measure. A bushel of the last-named, cleansed weighs 56 lbs., but 4 lbs. additional are allowed if they are not washed. A junk contains two-thirds of a bushel.

Pottle—Is a long tapering basket that holds rather over a pint and-a-half. A pottle of Strawberries should never hold more than one quart; a pottle of Mushrooms should weigh one pound.

Hand—Applies to a bunch of Radishes, which contains from 12 or 30 or more, according to the season.

Bundle—Contains 6 to 20 heads of Broccoli, Celery, &c.; Seakale 12 to 18 heads; Rhubarb, 20 to 30 stems, according to size; and of Asparagus from 100 to 125.

Bunch—Is applied to herbs, &c., and varies much in size according to the season. A bunch of Turnips is 12 to 25; of Carrots 15 to 40; of greens as many as can be tied together by the roots.

Grapes are put up in 2 lbs. and 4 lbs. punnets; new Potatoes, by the London growers, in 2 lbs. punnets. Apples and Pears are put up in bushels, sieves, or half sieves. A hundred weight of Kentish Filberts is 100 lbs. Weights are always 16 ozs. to the pound.

LITTLE NUT PEOPLE.



OLD Mistress Chestnut once lived
in a burr,
Padded and lined with the
softest of fur.

Jack Frost split it wide with
his keen silver knife,
And tumbled her out at the
risk of her life.

Here is Don Almond, a grandee from Spain ;
Some raisins from Malaga came in his train.
He has a twin brother a shade or too leaner,
When both come together, we shout " Phil-
opena ! "

Little Miss Peanut, from North Carolina,
She's not 'ristocratic, but no nut is finer :
Sometimes she is roasted and burnt to a
cinder,
In Georgia they call her Miss Goober or Pin-
dar.

Little Miss Hazelnut, in her best bonnet,
Is lovely enough to be put in sonnet,
And young Mr. Filbert has journeyed from
Kent,
To ask her to marry him soon after Lent.
This is old Hickory, look at him well,
A General was named for him, so I've heard
tell.

Take care how you hit him. He sometimes
hits back !

This stolid old nut is a hard nut to crack.

Old Mr. Butternut, just from Brazil,
Is rugged and rough as the side of a hill ;
But like many a countenance quite as ill-
favored,

He covers a kernel deliciously flavored.
Here is a Southerner, graceful and slim,
In flavor no nut is quite equal to him
Ha, Monsieur Pecan, you know what it
means
To be served with black coffee in French New
Orleans.

Dear little Chinguapin, modest and neat,
Isn't she cunning and isn't she sweet?
Her skin is as smooth as a little boy's chin,
And the squirrels all chatter of Miss Chin-
quapin.

This is Sir Walnut ; he's English you know,
A friend of My Lady and Lord So-and-So.
And now my dear children, I'm sure I have
told
All the queer rhymes that a nutshell can hold.

--Pearl Rivers, in Christian Observer.

* Our Book Table. *

JOURNALS.

FIRST LESSONS IN THE SCIENTIFIC PRINCIPLES OF AGRICULTURE FOR SCHOOLS AND PRIVATE INSTRUCTION, by Sir Wm. Dawson, C.M.G., LL.D., F.R.S., late principal of McGill University. Published by W. Drysdale & Co., 232 James St., Montreal. Price, 75 cents.

For those who wish to thoroughly understand the principles of agriculture, and like them put in a clear and concise manner, this work is admirably adapted.

ANNUAL REPORT of the Bureau of Industries for Province of Ontario, 1896.

Journal of Applied Microscopy (monthly), Volume 1, No. 1, of a very useful journal for students of the microscope. Bausch & Lomb Optical Co., Rochester, N. Y.

FIFTH REPORT of the Dept. of Agriculture of the Province of B. C., 1895-6.

OFFICIAL HAND BOOK OF THE DOMINION OF CANADA, published by the authority of the Minister of the Interior, August, 1897, 115 pages, beautifully illustrated.

ANNUAL REPORT of the Pomological and Fruit Growing Society of the Province of Quebec, 1896, Secretary, W. W. Dunlop, Outremont, P. Q.

CATALOGUES.

H. H. Groff, Simcoe. Cannas, Gladioli and Clivias. The Steele Briggs Seed Co., Limited, complete catalogue of famous seeds, plants, bulbs, etc., Toronto, 1898. A. M. Smith's complete catalogue of fruit trees, plants and vines, 1898, St. Catharines, Ont. James J. H. Gregory & Sons, Marblehead, Mass., catalogue of home grown seeds, 1898, free to all. Rennie Seeds, 1898, Wm. Rennie, Toronto.

Hersee's Catalogue of Fruit and Ornamental Trees, Roses and Shrubs. Edwin Hersee, Woodstock. Hull's Annual Catalogue Fruit and Ornamental Trees, Roses, Shrubs, etc., grown and for sale by A. S. Hull & Son, St. Catharines. J. A. Bruce's Catalogue of Seeds for 1898, Hamilton, Canada.