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Bed of Paeonies at the Central Experimental Farm, Ottawa,

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THE

CANADIAN HORTICULTURIST.

Vol. XXII.

TORONTO,

1899.

JANUARY.

No. 1



PAEONIES AT THE CENTRAL EXPERIMENTAL FARM OTTAWA, ONT.

By Dr. Wm. Saunders, Director.



H E paeony which is said to derive its name from Pæon a

Greek Physician who first employed the plant medicinally, may be conveniently divided into two groups, the herbaceous paeony and the tree paeony. The herbaceous paeonies have tuberous

roots something like those of the dahlia which send up stout flower stems every year, which at the close of the season die down. The new growth the following spring is made from strong buds or crowns which form on the tubers. These herbaceous species have been derived mainly from two wild forms, one a native

of Switzerland Paeonia officinalis which is said to have been in cultivation for more than three centuries, the other a Siberian species Paeonia albiflora, which was first introduced in 1734. shrubby forms of the paeony known also as the tree paeony have been derived from an Asiatic species known to botanists as Paeonia moutan. The tree paeony is much grown in Japan, China, and in the milder climates in Europe. In Eastern Canada it is more or less tender and unless well protected is liable to be killed to the ground during the winter, and even where protection is afforded during the severe weather, the tender shoots sometimes suffer injury from spring frosts. Where the tree paeony can be successfully grown it is a very desirable shrub; it blooms earlier than the herbaceous species and the individual flowers are wonderfully large and fine. About 20



Fig. 1485.—MADAME d'Hour.



Fig. 1887.—Decaisne.



Fig. 1486.—Berlioz.



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Fig. 1488.—Papaveriflora.

PAEONIES AT THE CENTRAL EXPERIMENTAL FARM.

varieties of the tree paeony have been tested at the Central Experimental Farm, but none of them have been found entirely hardy. When the snow comes early and covers the ground well during the winter they pass through this trying period without much injury, but in seasons where the snow covering is insufficient they are usually killed back nearly to the ground and not unfrequently killed outright.

The herbaceous paeony, with which in this communication we are chiefly concerned is one of the hardiest and best known of all perennials, and owing largely to the recent introduction of

many new and beautiful varieties its popularity is steadily increasing. It is hardy not only in the eastern previnces of Canada but also in the north-west portions where the winter climate is much more severe. At the branch experimental farms at Brandon, in Manitoba, and at Indian Head, in Eastern Assiniboia, a number of varieties have been tested during the past five or six years and most of them have proven quite hardy and have borne flowers very freely for the past two years. paeony succeeds well under almost every condition, and will thrive even in the gardens of the negligent and care-



Fig. 1489.—Solfaterre.

less, but when well cared for it responds to good treatment by producing a wealth of magnificent flowers of a most attractive character.

The tubers as supplied by the dealers especially of the newer sorts, are comparatively small, and do not usually flower the first year, but they grow rapidly and if left undisturbed for three or four years they form extensive clumps which produce flowers in great number and of large size. The plant is propagated by division of the roots, but where fine flowers are desired the parent plants should be disturbed as little as possible. The flowers are very varied in color as-



FIG. 1490.—Some-ganoko.

suming every hue and shade from the deepest crimson, through all tints of red and pink to pure white.

Of the herbaceous paeonies, there are now in the collection at Ottawa 141 named varieties, consisting mainly of those sorts which have been produced within the past thirty or forty years by florists in Europe. Most of these were planted in 1895, with a more recent addition of about thirty varieties from Japan. They are arranged in three large beds each containing three rows of plants put out three feet apart each way, and are planted so as to have the plants in the second row alternate, and those in the third row opposite those in

the first row. A part of one of these beds is shown in the frontispiece in bloom. The mass of flowers produced under these circumstances, when the plants are well established is very effective, and the heds are much admired when at their best in the latter part of June and early in July.

With so many beautiful varieties to choose from selection becomes somewhat difficult. I shall, however, venture to name a few which appear to be among the most desirable of those which have

yet been tested at the Experimental Farm.

In Figure 1485 we have a single flower of a variety known as *Madame d'Hour*. This was planted in 1895, bloomed well in 1897, and magnificently in 1898 and is certainly one of the best in the collection. The flowers are very large and double, the petals nearly white with a delicate rosy tint becoming deeper in color towards the base. The specimen from which the illustration was taken measured seven inches across and the blooms were produced in great profusion.

Berlioz, shown in Figure 1486 is another good sort. The flowers are large

10

to very large, very double, of a deeprose-color with paler shadings on the margins ofthe petals. This also was planted in 1895, made strong growth, bloomed freely in 1897, and very freely in 1898.

Ambrosie verschaffelt is a charming flower of medium size, a deep crimson-color and is very full and double andwell formed, it also bloomed well.

Decaisne (Fig. 1487)
—This is a strong
grower and freebloomer. The flowers
are large, full and
double, of a blushpink color, paler in
the centre. In addition to its other
attractions this variety
exhales a pleasant
rosy odor.

Purpurea superba produces flowers which deserve to rank with the best. This variety is a strong'grower and very free bloomer. The flowers are of a deep rose-color finely formed and very attractive.

Papaveriflora (Fig. 1488) is an elegant flower of good form and very double. Its color is white with a faint yellowish tint. The outer petals are wide while those forming the inner part of the flower are much narrower, making a very handsome combination.

Solfaterre (Fig. 1489) is not very double, but is very loose and graceful in form, the outer petals are wide and



Fig. 1491.—Tatsu-gashtra.

of a pale rose-color, while the centre is made up of much narrower petals which are almost pure white. This is a very free bloomer and is one of the sweetscented sorts.

The Japanese varieties were planted in 1897 and 1898, and all those which have bloomed have shown much grace and delicacy of form with striking combinations of color. Most of them have only one or two rows of outside petals which are wide and the centre is filled with a cluster or rosette of very narrow petals, delicate in form and hue, usually tinted with shades of yellow margined with pink. The Japanese appear to prefer these chaste and loose semi-

double forms to the larger, stiffer and more fully double sorts; some of their flowers are of great beauty of form with wonderful delicacy in their tints.

Some-ganoko (Fig. 1490) is a good representative variety of this class. The flower is of medium size, the outer petals of a deep blush rose with paler markings, the centre being filled with a lovely rosette of very narrow yellow petals neatly arranged, each with a thread-like base and tinted above with pink.

Kame-no-Kegoromo is a large handsome, loosely double flower of a deep carmine-red color with a number of narrow petals distributed about the base of the wider petals, the former being crimped and twisted, yellow in color, margined with red. Tatsu-gashira (Fig. 1491) is also a very beautiful flower. In this variety there is a single row of wide petals nearly white, with the centre partly filled with a loose cluster of very narrow yellowish petals tinted with rose.

Paeonia tenuifolia which is shown in the front of the bed seen in frontispiece, is very striking on account of its finely cut foliage. It is a distinct species from the other sorts referred to of which there are two varieties in common cultivation, one of which is single, the other double and both of a deep crimson-red color. This is a native of Siberia, is very hardy and is the earliest variety to bloom.

THE ST. CATHARINES MEETING.



FIG. 1492.—MAYOR GILLBLAND.

ELDOM has the Ontario Fruit
Growers' Association received
a warmer welcome than that
extended to it by the Garden
City, on the 1st and 2nd of December

City, on the 1st and 2nd of December last, and put in the form of a welcome

address by Mayor Gilleland at the evening session. It is some satisfaction, after a year of hard work on the part of the officers of our Association to find that their labors have been appreciated, and that the literature on fruit gowing they have been able to send out has been helpful to their patrons.

St. Catharines is beautifully situated on that highly favored belt of land lying below "The Mountain," a glimpse of which is seen in our engraving looking down from the cut near DeCew Falls; whence the pipe line of the Cataract Power Company descends to the power house below. This gigantic enterprise undertaken by a Hamilton Syndicate is about completed, and will be of great value to the manufacturing interests of that city. The Welland Canal is another important feature of this vicinity, not only giving beauty to the landscape, but what is more important, low freight

THE ST. CATHARINES MEETING.



FIG. 1493.—CUT NEAR DECEW FALLS.

rates for fruit and grain to the great markets.

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Geneva Street is one of the principal suburban streets, well shaded with beautiful elm trees, planted nearly a century ago by Dr. D. W. Beadle, father of our former secretary. The view in Fig. 1495 shows the portion of the street between the Beadle estate and Mr. A. M. Smith's residence. Among the pretty houses in the outskirts we may mention that of Mr. W. W. Wanless, of Niagara St.,

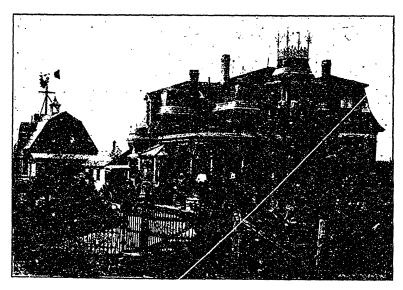


Fig. 1494.—W. W. Wanless' Residence.

with about 16 acres in fruit, the lawns and gardens about the house are tastefully laid out, and well deserve the name given it of "Fruitfield."

Our Association met in this old town on Thursday morning, Dec. 1st, at 10 o'clock, and under the management of Mr. W. E Wellington as President, proceeded at once with the business of the day.

FRAUDS IN FRUITS

money under false pretenses. An especially regrettable feature of this species of dishonesty was that it was occasionally winked at by the judges, who were aware of the fraud. The speaker thought that some mans should be taken to stamp it out. In the discussion which followed, the practice which Mr. Smith had so strongly inveighed against was roundly denounced. Strong measures were advocated to put



FIG. 1495 .- GENEVA STREET, ST. CATHARINES.

was the subject of a paper by Mr. A. M. Smith, who contended that there were exhibitors at many of the fairs who were guilty of collecting good samples of fruit from their neighbors or elsewhere and displaying them as their own production. Those who were in the habit of practising this deceit were apparently unaware that they were guilty of fraud, and of obtaining the prize

down the custom, altogether too prevalent. of exhibiting purchased or borrowed fruit. Mr. Pettit said he believed in having a special class made of such exhibits and putting them in as educational, not competitive showings. If such exhibits were correctly named it would be an education to the people of the country along the lines of our resources.

THE ST. CATHARINES MEETING.

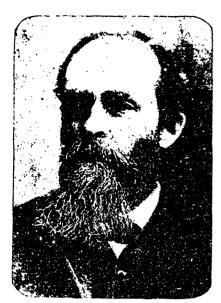


Fig. 1496.—Mr. A. M. Smith

The President said that at the Industrial there were open classes for Societies, and the restrictions were for individual exhibits only Mr. McNeill wished it were possible to return to those classic days when exhibits were made for honor, and not for mere money gain. Mr. Caston said he had seen at the Industrial some of those professional exhibitors who buy up fruit for exhibition at smaller fairs for the purpose of sweeping off the prize money. The opinion seemed to prevail that it was but to remove all restrictions at prouncial, or international fairs, but to strictly enforce them at local fairs.

THE RINGING OF GRAPES

for exhibitions was also discussed, because some judges were said to throw out a plate of grapes from competition that showed evidence of having been produced by ringing. Mr. Whyte claimed that such grapes were inferior in quality, though of enlarged size, and the Judge would simply need to consider all these points in giving his award. Mr. Huggard claimed that exhibitors should be allowed to fertilize, thin, ring, or treat their fruit in any way they may choose, in order to produce fine samples for exhibitions. Mr. A. H. Pettit thought that if ringed grapes were to be thrown out, the Judges should be compelled to ticket them with the reason, else the public would be puzzled over the awards.

Prof. Macoun, of Ottawa, read a "Russian Fruits." paper on gentleman is a son of Prof. Macoun, the Dominion Botanist, and has been for some time Assistant to Dr. Saunders at the Central Experimental Farm. On the resignation of Prof. Craig, he was appointed Horticulturist. vited suggestions from the Ontario fruit men as to the various lines of work by which he could assist their industry. He had found the Russian Morello cherries to have especial value for the Northern districts, and at Ottawa they were much sought after in the local market. He especially commended the Koslov Morello, which was imported by the Ontario Fruit Growers' Association in 1889, and of which a couple of dozen trees had been forwarded to the Central Experimental Farm by the Secretary for test. Mr. Woolverton said he had a few trees of this lot of cherries now in bearing in his orchard. They had been sent him by Mr. Jaroslav Niemetz, of Winnitza Podolie, Russia, who commended them very highly, because they bear early, and are quite productive. They are rather to be called bushes than trees, for at fifteen years of age Mr. Niemetz stated they only reached three feet in height. Those at Maplehurst now eight years planted, are still bushes, but the fruit is good, much like English Morello, but later; and being bushes, they may be planted in rows like raspberry bushes.

EXPORTING TENDER FRUIT.

Prof. Robertson delivered a capital address on "Prospects for export of tender fruits." He spoke of the experiments in sending various fruits to the British market by cold storage under the best conditions which could be obtained. The result of these experiments had been in some cases favorable,

mand. A profitable trade in exporting Early Crawford peaches to the British market could not be expected. This fruit was so tender and had to be picked so exactly right that the prospect was anything but good. Some other varieties might succeed. The case of tomatoes was still doubtful. The Canary Islands were at present sending such an abundant supply that they would stand in the



Fig. 1497.—Residence of Chas. Riordan, Geneva St.

and in others not so favorable. The prospect of a profitable business in export of Canadian pears, was he said, extremely good. We had here the conditions for producing abundantly this class of fruit, which the British public wanted and were willing to pay for. As far as plums were concerned, he said that while in some seasons they would bring high prices the home crop would generally be sufficient to meet the de-

way. No large export of grapes could be looked for especially of such varieties as Concord or Niagara. In the case of the more tender sorts of apples, such as Astrachan, Duchess or Alexander, a large trade could be developed only by shipping in cold storage. As far as currants and raspberries were concerned, he thought they should only be sent in pulp and, if there was a large crop in England, even this would

THE ST. CATHARINES MEETING.

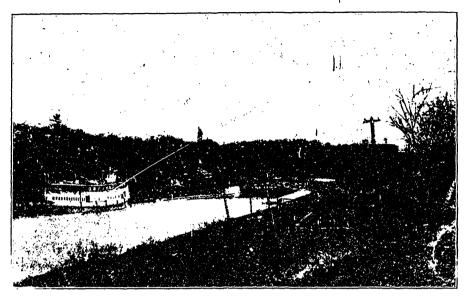


FIG. 1498,-LOCK 2, OLD WELLAND CANAL.

be useless. In speaking on the subject of trans-atlantic transportation of fruit, Professor Robertson said that the early ripening apples should be cooled to below 50 degrees as soon as they were taken off the trees, and then before being packed they should be cooled below 40. This would ensure their arrival in England in good condition if the carriage was right. was no possibility of carrying the tender apple except by cold storage. urged very strongly the necessity of grading and packing apples intended for export. Fruit growers should be aroused to the importance of not allowing the commission men to buy their apples unless they graded them, as on this their market largely depended.

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A GOOD YEAR'S WORK.

The evening session was enlivened by several pleasant features. Mayor Gilleland gave a cordial address of welcome, which was responded to by President Wellington, and during the evening Miss Daisy Torrey, B.E., of Gravenhurst, a

graduate of Philadelphia College of Oratory, gave several recitations. Miss Torrey is an elocutionist of rare ability, and her renditions were received with great applause.

In his annual address, President W. E. Wellington congratulated the members on a successful year's work and on the excellence to which the monthly journal had attained. Last year, he said the members' fees had netted \$3,375, and this year they had risen to \$4,147. Last year they had 3,315 members, and this year 4,151, who had paid their fees, and 375 who had not. The total receipts this year had been \$6,585, which left a balance on hand of \$784. He suggested that the size of the journal should be increased by one-third. After dwelling on the practical work of the Association, the President spoke of the reception by Hon. Sidney Fisher of the deputation which had gone to Ottawa to interview him regarding the San Jose scale. his courteous and prompt action in responding to the wishes of the deputa-

tion, he showed himself to have at heart the true interests of the farmers. The Provincial Government, too, had ably seconded his efforts in this matter. He referred in a congratulatory manner to the truit experimental work and to the establishment of an experimental station on St. Joseph Island. The encouragement received in the matter of exportation to Great Britain was also mentioned with gratification.

MICHIGAN FRUIT GROWERS.

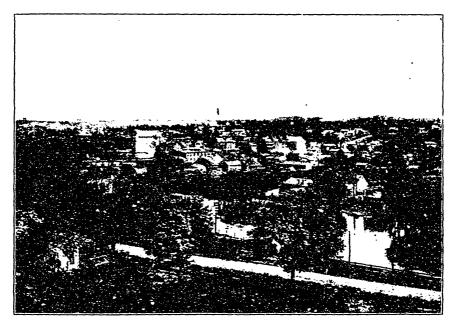


Fig. 1499. -- Lower Town, (Ann Arbor) Boulevard and Huron River.

S a delegate from Ontario to the Michigan State Society meeting at Ann Arbor, we reached that town on Tuesdayafternoon, Dec. 6th. It was a pleasure to meet such men as President R. Morrill, of Benton Harbor; C. W. Garfield, of Grand Rapids; Thos. Gunson, of the Michigan Agricultural College; C. J. Monroe, of South Haven; L. B. Rice, of Port Huron and others, who are in the front ranks of Michigan Horticulture.

The meetings were held in the Uni-

versity buildings, some of them in the Museum, because it was provided with apparatus for showing views and thus illustrating the lectures. (See Fig. 1501.)

One of these illustrated lectures was given by Prof. F. G. Newcombe, of the University, on "What are Fruits," who kind'y agreed to write it out in an abridged form for use in this Journal, and to send us photographs for engraving. He is an enthusiast in botany, and knows how to make his subject interesting.

Mr. R. J. Coryell, Supt. of 'Parks,

MICHIGAN FRUIT GROWERS.



Fig. 1500.—President James B. Angell.

Detroit, Plso promised a copy of his address on "Object Lessons in City Parks," so we omit our notes on these valuable papers.

ARE WINTER PEARS PROFITABLE

was a question which was answered doubtfully. Mr. Kellogg included Kieffer in his list for profit. In December last year he was offered 50c. a bushel for them, but he held till January, when they yellowed up beautifully and brought \$2 a bushel. Even its quality seems to improve, if properly ripened, while for canning it is as good as Bartlett.

Mr. James B. Angell, President of Michigan University, gave an interesting address on Turkey, having himself resided there three years, as U. S. minister.

That country is fossilized—it has not changed for 500 years, and is a long way behind us in horticulture, as well as every other interest. Their apples, peaches, plums and pears are far in-

ferior, their cherries and apricots are good, and the only fruit in which they excel, and which they export in any quantity are figs. But their methods of cultivation are of the most primitive character. Their plow merely scratches the surface of the ground. There is no local mail in Constantinople, and no public roads in the country, so that all products have to be transported on the backs of animals. Is it then any wonder that there is no encouragement to commercial horticulture.

THINNING FRUITS

was treated by Prof. S. A. Beach, of Geneva. We must use every method he said to secure high grade fruit. I hinning was long practiced by the gardeners of the nobility in England, but only recently is being adopted in American commercial orchards as a profitable investment.

He had experimented with three varieties of apples, and found in each case an improvement in size and color. The Greening had actually given him a greater quantity of fruit than where it had not been thinned, the Baldwin and the Hubbardston gave 10 or 16 per cent. more of 1st class fruit, but the unthinned gave the greatest quantity, all grades being counted. He had thinned the apples to four inches apart.

More decided results were obtained in the case of peaches, which he had thinned from four to six inches apart. The thinned fruit weighed nine to the pound, and the unthinned, twelve; and the trees themselves were less subject to disease, hence the benefit was not merely annual. In years of abundance, thinning peaches would certainly pay, even at a cost of from 5 to 10 cents per tree.

President Morrill had practised thinning peaches on a large scale. He had about 100 acres in peaches at Benton

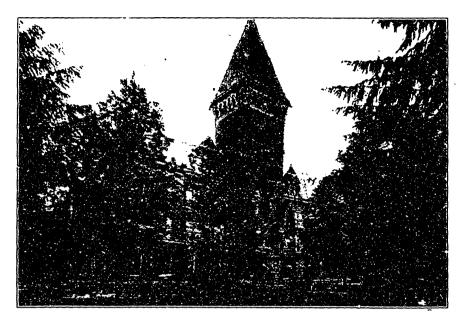


Fig. 1501,-The Museum.

Harbor, and spent hundreds of dollars on thinning. It cost him from 2½ cents to 10 cents per tree, but he could not afford to neglect it in seasons of abundance. His rule was to thin to 6 or even 8 inches apart.

Hon. C. J. Monroe, of South Huron, advocated legislation to prevent the shipment or sale of

SCABBY OR INSECT INFESTED FRUIT.

He reviewed the condition of fruit growing the last few years, and pointed out the condition of our markets glutted not with good, but with second class fruit. A resolution was the only hope, by which the scabby and infested fruit should never be allowed in our markets.

California growers are alive to this, and are asking legislation providing for fruit quarantine, and the confiscation of all wormy fruit, or scabby fruit found on the markets, or at the shipping points.

We cannot compel every man to

spray his orchard for scab; nor to bandage his trees for codling moth, but we can make it a misdemeanor to offer such wretched stock for sale, and this will most effectually check its production.

The California Horticultural Act provides even for the disinfecting of all fruit boxes that have been once used, before using them a second time. It also provides that all wormy, fallen fruits in the orchards be gathered and destroyed at least once a week.

The result of such a law would be ather that a large proportion of the fruit now produced would remain unmarketed, except to the canner or the evaporator, or else the production of a higher grade of fruit that would do credit to the producer and to his country.

It is the interest of the fruit grower himself we are consulting. As it now is a careful grower who grades high, sprays thoroughly, and packs conscien 以下が、大日本の日本の日本の大日本

THE MIGHIGAN FRUIT GROWERS.

tiously must compete against the careless man who gluts the market with poor stock. United action is needed to destroy the market for all such stuff, and then the lazy and indifferent grower will be compelled to cease shipping it.

Mr. Monroe quoted largely from reports of other countries in support of his position. The Jamaica Agricultural Journal says that her exports are chiefly to the United States, and they are asking for steamers specially fitted up to carry their fruits, and for inspection of their fruit at point of shipment.

In Tasmania orchardists are fined if they fail to bandage their trees for codling moth, or if they neglect to destroy the fallen infested fruit.

New South Wales has adopted a rigid inspection of all imported fruit packages. Thousands of packages are unloaded from the steamers, but cannot be offered for sale until inspected. The inspectors often begin work at 6 o'clock a.m., each accompanied by a man to open and close packages, and which is done with astonishing rapidity. Condemned cases receive a certain mark, and cannot be offered for sale.

At first great numbers of cases were condemned, but after a time, the shippers learned wisdom, and now only an occasional lot has to be condemned.

Mr. Munroe proposes that a law be passed in Michigan embracing among other points the explicit prohibition of the sale of wormy, scabby or infested fruit, the destruction of fallen wormy fruit, that shippers guilty of breaking the law be liable not only to confiscation of the fruit, but to a fine equal to double

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the value of the fruit, and that every package offered for sale bear the shipper's name.

THE PEACH OUTLOOK

was treated by Hon. R. D. Graham, a wholesale peach grower. He says he is encouraged. He finds that by growing a good fruit in sufficient quantity, he can attract the buyers to his own locality. The peach is as sure a crop as any other, and in our late peaches we have practically no competitor.

Engleman, Gold Drop, Kalamazoo were recommended as good shippers, but Mr. Morrill, of Benton Harbor, said the Elberta was the best of all. He had shipped that variety to New York City in bushel baskets, in a refrigerator car, and it had arrived in perfect condition, although it was held four days before being sold. He had kept Elbertas in cold storage for twenty-four days, and taken them out in prime condition. Elbertas shipped up from the South had been put on our Northern markets in better condition than our own peaches of other varieties.

THE FUTURE OF APPLE GROWING

was introduced by Mr. Morrill, who pointed out that we had reached a new era when apple growing under the old methods was a failure, but the up-to-date grower who could produce perfect samples of the finest varieties would make money out of them We live in the best apple region of North America, and near to the best markets. Chicago is one of the best apple may tets in the world.



SPRAYING OF PEACH TREES FOR THE PROTEC-TION OF THE BUDS AND FOR CURLED LEAF.

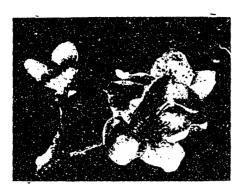


Fig. 1502.—Showing difference in time of blossoming of whitened and unwhitened buds. (After Whitten).

ROBABLY no other fruit grown in Ontario so often disappoints the well grounded expectations of the orchardist, as does the peach. The location may be favorable and the soil well adapted and perfectly drained; the wood may be well ripened and go into winter with abundant promise of a bountiful crop for the next season; but when the enterprising grower, endeavoring to ascertain the prospects for a crop, goes to the trees in January, February or March he often finds, on cutting open the buds, that the heart is black and dead. Not infrequently all the buds are affected in this way and the crop is a total failure. Sometimes there is vitality enough in the buds to blossom but not to set the fruit, thus cruelly disappointing the hopeful grower. This is due to the freezing of the buds after they have been stimulated into growth by a few bright warm days. Every peach grower knows that when in good condition peach buds will stand a temperature considerably below zero; while buds which have been exposed to warm weather will be killed by a much higher temperature. Many experiments have been made to overcome this difficulty but have been abandoned as ineffectual or too expensive for commercial orchards. Mulching the ground under the trees, after it was frozen, so as to keep the roots dormant was tried and abandoned, when it was known that the buds would swell and even grow under certain conditions, while the roots were frozen and dormant.

The building of sheds, baling and laying down of the trees were all successful but of no use to the grower from a commercial point of view.

The temperature seldom rises high enough in the shade, during the winter, to stimulate the growth of the buds. The problem thus was, how effectively and cheaply could the buds be protected from the direct rays of the sun.

With this problem yet unsolved, we heard that a series of experiments were being conducted at the Agricultural Experimental Station at Columbia, Missouri, in which the trees were whitened with a lime wash.

The theory was that whitening the trees would prevent them absorbing heat on bright sunny days and that they would remain dormant during the winter and blossom later, thus also being less exposed to frosts in the early spring.

A test was made to ascertain the amount of heat absorbed by different colored objects of the same texture.

It was found that on dull days, or when shaded, no difference existed, but when exposed to the sunlight a marked difference appeared. Frequently a difference of 10 deg. or 15 deg. was indicated, and when the sun was very bright

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SPRAYING PEACH TREES FOR PROTECTION OF THE BUDS.

there was 21 deg. difference between the white and purple thermometers.

The theory looked all right, and we decided to put it to the test. We selected 100 young and vigorous trees of the following varieties: Stephens Rareripe, Wheatland, Smock, Centennial, Early Rivers and two seedlings, and gave them a good whitening, going over them twice, late in December, again in February and a third time in March. The material used was fresh stone lime slacked with hot water and used as thick as it would work through a Bordeaux

as follows:—In the latter part of December we will spray with the following solution: 40 gallons of water and skim milk or butter-milk, about one-fifth being milk if possible, copper sulphate 4 lbs., salt 5 lbs., and enough lime to bring the whole to as thick a mixture as will work readily in the pump. As soon as this is dry we will follow with the same mixture only ornitting the copper sulphate We will spray also, early in February and early in March, using the solution without the copper sulphate. We expect this will be all that is required but should the cost of

quired, but should the coat of whitewash at any time become thin we would make an application at once.

There was a considerable amount of curl leaf on the trees in 1897 and for fear of a recurrence of the disease in 1898 we decided to treat them with Bordeaux mixture.

In April we sprayed the whole orchard excepting one side of each of three rows, and gave a second application in May. The mixture used in both cases was of standard strength and each barrel was tested with

the ferrocyanide of potash test.

The application made in April while the trees were dormant caused no injury, but in May, after growth had srarted, it injured the twigs badly on the narrow leaved varieties, the Longhursts dropping almost all their foliage and fiuit. The fallen foliage appeared perfect, the trouble being apparently with the twigs, which afterward shrivelled and died. No damage was done to broad leaved varieties.

Otherwise than the damage referred



Fig. 1503.—Sections of unwhitened (a) and whitened (b) buds of Heath Cling Peach, taken March 20th, 1896, showing that the unwhitened bud had swollen and grown considerably and had an imperfect pistil, while the whitened bud was nearly dormant, and had a perfect pistil—Whiten, Mo. Exp. Station, Bull. 38.

nozzle. One fifth milk was added to each barrel to make it adhere to the tree. The trees were completely coated and some of the wash remained on them all'summer.

The trees thus treated were later in blooming than those untreated; but it was impossible to judge of the benefit as all the trees came through in splendid condition and we had a fair crop considering the very heavy crop of the previous year. However, we shall try again this winter, and our programme is

to the work was satisfactory, as the orchard was only very slightly affected, while the sides of the three rows which were not sprayed were badly diseased.

On the trees which were whitened throughout the winter in addition to the Bordeaux sprayings, scarcely a curled leaf could be found. The orchard was visited by a number of prominent fruit growers from Grimsby, Winona and other points who expressed themselves as pleased with the results.

To avoid a repetition of the damage to the foliage this year we will use only 2 lbs. of copper sulphate to 40 gallons of water when we spray in April and May.

W. M. ORR.

Fruitland.

PEACH GROWING.

COME nine thousand acres of land in western New York are devoted to the peach industry, and, in accordance with the new law of that state, Professor Bailey has been making reports to the Commissioner of Agriculture on the condition of that industry. The facts in the case, and the counsel based upon them, seem so important that we give our readers a digest of parts of this report. Professor Bailey thinks that the peach industry, more than any other pomological interest, suffers peculiarly from careless methods. The first error is lack of cultivation; the second, inattention to borers and yellows; the third is neglect to thin the fruit, and the fourth is carelessness in marketing.

Location and Soils.—Many orchards are planted on land which is unsuited to them, such as heavy clay soils, or low lands with imperfect drainage of water and of air. The ideal peach soil is deep sand, upon which trees make a hard growth. The wood matures early, the trees bear well and the fruit has high color and flavor. It is such soils and exposures which have made the Peach region in Delaware, New Jersey, the eastern shore of Lake Michigan and some parts of the south famous. Peaches may be made to

grow on heavy land, but the trees must be severely headed in. The gravelly soils about the New York lakes are well adapted to the peach, but in the interior part of that state, away from the lakes, peaches only thrive on elevated lands which are naturally drained and escape the late spring frosts, so often disastrous to the peaches on lower places.

Cultivating and Fertilizing.—Peach orchards should never be cropped after the third year, and on sandy lands especially, if the trees stand less than twenty feet apart, they should never be cropped from the time they are set. Frequent stirring of the surface-soil from May until August is desirable, and thereafter, perhaps, a green crop should be raised to be plowed under next spring. The orchard should, under no circumstances, be sowed to grain or seeded down, but it is easy on strong land to produce an overgrowth. Trees grow quickly to a great size, they bear poorly, and in some cases are never productive of much fruit; they run to wood, and the wind tears them to pieces. In addition to land which is too strong, too free a use of barnvard manure or other nitrogenous fertilizers is often made, and cultivation is continued too late in autumn. Potash and

phosphoric acid, and not nitrogen, are the true fertilizers for peaches. muriate of potash and bone fertilizers make productive trees. Tillage with green crops, to turn under at the end of the season, will furnish sufficient nitrogen generally, and even then it is possible to plow under too much crimson Nitrogen, it is true, lies at the foundation of successful agriculture, but its greatest benefits are to be had from annual crops in the farm and garden. It can also be applied advantageously to newly set fruit-plants, but it can be easily used to excess.

Pruning.—The difference of opinion as to the proper methods of pruning turn on three practices: (1) short trunks with rapidly ascending branches; (2) high trunks with more horizontal branches; and (3) shortening in or heading back the annual growth. of these methods has distinct advantages for different cases. The nature of the soil is the controlling factor in deciding which is preferable. The natural method of pruning trees on a sandy soil is to allow the tree to spread at will into a vase form, with no heading inthat is, to let the trees have short trunks and forking branches. The low trunk allows an open top, where the peaches color better. High-topped trees are more easily tilled, and it is quite as easy to pick their fruit. It is the better method on rich land, for it keeps the tree within bounds. Heading in is usually done in winter, and one-third to a half of the annual growth is removed.

This heading in always makes a thicktopped tree.

Thinning Fruit.—No two peaches should be allowed to develop nearer than five inches apart. No work of the orchard pays better than thinning the fruit either in the price which the remaining produce brings or in the energy which is saved to the tree. When regularly thinned the tree bears every year unless injured by frost. The fruit must be picked sooner or later, and the work is more easily done in June than September, so that no labor is lost. The thinning should be delayed until the fruit is the size of the end of a man's thumb, and by this time the "June drop" has occurred, and the fruit can readily be seen.

Marketing.—But if growers are negligent in thinning, they are positively careless in marketing, and everybody knows that nicely packed fruit brings good prices wholly independent of its quality. Hand boxes containing sixty wrapped California peaches have sold from \$2 to \$4, although of inferior quality when they reached our market, and alongside of them our own peaches, of better flavor, have sold for twenty-five cents to seventy-five cents when carelessly dumped into a half-bushel basket. The main fault in handling peaches are too large packages, lack of grading and selection, lack of covers to the basket, which allows the fruit to be crushed, when it will have a disagreeable and forbidding look, and cannot command a fair price.-Garden and Forest.



EXPERT QUINCE CULTURE.

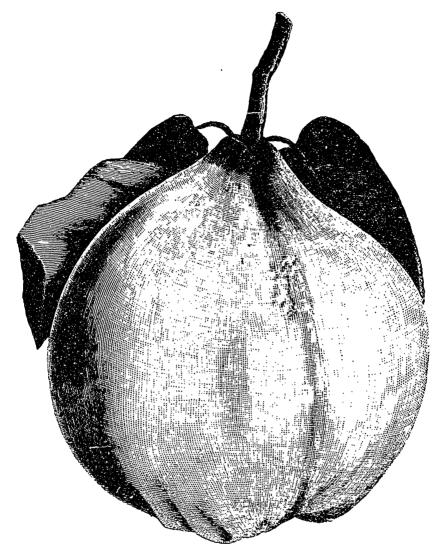


Fig. 1504.—The Fuller Quince.

HE bulk of the crop of quinces that have been sent to market this winter shows that there is something radically wrong with the system of culture pursued by the majority of fruit growers. The occasional receipt of some fine quinces that are free from blemishes is the only thing to keep consumers from

despaining of ever getting perfect fruits. But the quince responds to culture as well as any fruit, and they may be grown to perfection if the right rules are properly observed. To begin with, then, it is necessary to dispel a few notions that some growers have acquired through erroneous conception of an old trite say-

EXPERT QUINCE CULTURE.

Nearly all text books upon quince culture have said that they require moist soil, and many have interpreted this as meaning wet, boggy soil. More quince orchards have been set out in low, wet, cold ground, than upon good rich upland, properly irrigated. The quince invariably does better upon high, rich upland soil, where perfect irrigation can be given, and trees planted in such localities will bid fair to produce fine fruits.

The next point is to give the quince tree as much attention and cultivation as any other fruit. It should be remembered that naturally the quince shrub is a large, straggling growth, and never assumes the shape of a tree unless so trained. It will do better,

however, if its natural rambling habit is somewhat checked, and a better shape given to it by judicious pruning. But too much pruning is injurious to it. Onlythin out the suckers every season inside of the shrub, and trim the head to a symmetrical shape Beyond this do nothing with the pruning knife.

Once a year at least, and twice is better, examine the stocks for borers, and cut them out and kill them, removing at the same time all suckers starting up around the roots. If the codlin moth or quince curculio are on the shrubs, spray freely with Paris green, and do not give them a good foothold. Spray as other fruit trees, soon after the fruits have set, in the spring of the year. The leaf and twig blight and scab which ap-

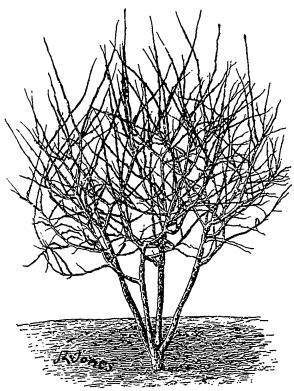


FIG. 1505.—UNPRUNED TREE.

pear upon the fruit, must be conquered by spraying freely with the Bordeaux mixture. The scab in particular must be kept under control, as it ruins more fruit than a little.

As to varieties, select only the best. One of the best is "Rea's Mammoth," and it succeeds well in the climate of New York state. It produces a large, handsome orange-shaped quince, that sells readily in the market. The Old Champion is another large variety that should be cultivated, and Meech's Prolific is very fine as an abundant producer. The Fuller quince is a pear-shaped fruit, but of excellent quality. The Borgeat is a very fine early quince, and is very satisfactory. Do not select the Angers and Fontenay for producing fruits. They

are the best adapted for stock on which the dwarf pears are to be grafted. The Portugal quince is a smaller variety, and is of inferior quality, and the Chinese guince is not to be desired. The varieties named are old standard fruits, and can be depended upon. Other newer varieties have since been put upon the market, and many undoubtedly possess excellent qualities but the writer has never tried them, and cannot vouch for their goodness. In the present uncertain and unsatisfactory condition of general quince culture, it is better to select only the varieties that have shown themselves to be worthy of attention. - Germantown Telegraph.

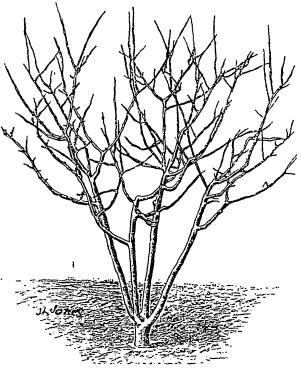


Fig. 1506,-A PRINED TREE.

FRUITS AT OUR FAIRS.

N the last issue of your splendid journal I noticed an article by Mr. Alex. McD. Allan, in reference to the twenty collections of pears at the Industrial Exhibition, Toronto.

Now Sir, I may say that I am one also who was struck by the first prize collection there exhibited, for I presume the education of the public, particularly the beginners in fruit culture. But we need not be surprised at anything of the kind any more, since the Keiffer Pear is the best for the British market in preference to our delicious Bartletts, or Beurre Boscs, Sheldons, etc. Now sir, I am not going into the merits or the

demerits of the collections above mentioned as I might get myself into a hornet's nest, the collections spoke for themselves to those who know the varieties, but I would pity the beginner who might copy the names of this collection with the intention of planting the same. Just think of a beginner planting one hundred trees of Easter Beurre, or winter Nelis, where could he sell the fruit; this I consider would be a great loss not only to the party that might plant, but also to the province at large. May I also ask what authority has the fruit grower or the exhibitor, and I may add the judges, to go by, as to the merits, value or the quality of our fruits as a

FRUITS AT OUR FAIRS.

guide. The Exhibitions are a poor guide, as in my opinion the prize list should read differently, and this work should rest on the shoulders of the Fruit Growers' Association. For instance, the prize list reads: "Twenty best varieties of pears." Now sir, I might have in reality the best twenty, but my friend with the largest specimens, two or three worthless varieties, which I think should not count points enough to change the prize. I think this trouble to the judges could be settled. for all time to come by stating the names of the varieties to be shown in the collections, so many winter, fall and summer; care to be taken not to name any summer varieties that might not keep to September. This method would

keep out of collections any worthless varieties, such as the Easter Beurre, Winter Nelis, Josephine de Malines and so on. I want to be understood when I say worthless, that I mean worthless to grow for profit; this plan would work admirably with the collections of plums, since there is such a mixed up lot every year and they were particularly so last There would have to be a few extra varieties named in the list in case of a certain variety failing to fruit, or otherwise one might count the number on hand, if they are short it will make easier work to judge, if one lot has the full number and the other is one or two short of the given number of varieties.

RODERICK CAMERON.

SHAFFER AND COLUMBIAN COMPARED. -During a very dry season, like the preceding one, many raspberries are liable to crumble more or less. Strange as it may seem, berries growing in a very wet place with poor drainage are affected in much the same way. Poor soil is sometimes a cause for the same trouble. In this case, the raspberry itself is at fault. Shaffer's Colossal is a vigorous grower and very productive, but while the berries are very large and finely flavored, they are extremely soft, of a dull ugly color, and not all firm, making it a poor variety for shipping. It is, however, a delicious berry, and is excellent for table use and for canning. Columbian, which closely resembles the Shaffer, is a better berry, being much firmer, remaining longer on the bush, and retaining its shape after being picked; though even the Columbian is

not an ideal market variety.—American Gardening.

Proper Temperature.—"The following table will give the best temperature for the storage of some of our most common produce.

Apples	from	30°	to	45°
Berries	4.8	36	to	40
Celery	**	35		
Cranberries	11	34	to	38
Pears		36		
Onions	11	34	to	40
Potatoes	15	36	to	40
Asparagus	н	34		
Cabbage	41	34		
Maple sugar and syrup	11	40	to	45
Flour and meal	tı	40	to	45
Brined meats	11	36	to	40
Dried beef	44	36	to	45
Fresh beef	44	37	to	39
Ham, ribs and shoulder	41	30	to	35
Eggs	•1	33	to	35
Lard	11	34	to	45
Mutton	41	32	to	46
Veal	44	33	to	36
Grapes	44	36	to	38
Butter should be given a	senar	ate	ro	om
ith temperature at 22°."-A	m. G	ard	eni	ng.

ELÆAGNUS LONGIPES (GOUMI.)



FIG 1507.—ELÆAGNUS LONGIPES.

NTIL lately, not much attention seems to have been shown to this handsome shrub. Individual specimens flourished in many large gardens, but until the horticultural press had noticed it, and nurserymen had given it prominence in their catalogues, it remained somewhat obscure. Now that it is in popular demand the accompanying illustration,

and a few words concerning it, may be of interest to our readers.

Elæagnus longipes is a native of Japan and belongs to the same class which gives us the well-known Buffalo Berry (*Shepherdia argentea*). It is a beautiful shrub of from five to six feet high, well branched, and with an abundance of foliage that is oblong-oval in shape, and in color pale green above

WRAPPED FRUIT.

and silvery white beneath. In May it is covered with small, pale yellow blossoms, which appear in great profusion. The berries are oval, resembling an olive in shape, of about the size shown in the illustration, of a bright scarlet color flecked with golden yellow, and ripen in July. When fully ripe these berries possess a rather pleasant, aromatic flavor but before maturity they are acid and astringent. It is said that in Japan the fruit is eaten raw, and also pickled and preserved. In this country it has been found, when cooked like cranberries, to make very good sauce and pies and also to be valuable for jelly-making.

在这个人,这个人的是一个人的人,这种不少,一个一种,这个人的人,他们也是这种人,他们也是一个人的人,也是一个人的人的人,也是一个人的人的人,也是一个人的人,也是

As to the hardiness of Elæagnus longipes we are not prepared to say just how far north it may be safely exposed without winter protection, but here, in New Jersey, the plants stand out, entirely uninjured all winter. We have seen no indications of any tendency to fungous disease, and it is perfectly free from insect attacks.

It would thus seem that this shrub is desirable for ornamental purposes and also, to some extent, valuable for its fruit for culinary use. Its symmetrical habit and pretty, pale, silvery foliage render it useful for grouping with shrubs of darker color, and when loaded down with ripe fruit in summer it is an object of much beauty.

We find in this, as with many other plants from Japan, some confusion of Thus there are 17. Longipes, E. edulis, E. pungens, E. Simoni, E. umbellatus, and probably others that we know not of. Longipes, edulus, and pungens appear to be all the same plant, and longipes is probably the best name. Umbellatus is a different species from longipes and is known also as Simoni. It is a very strong, vigorous grower, often reaching a height of ten feet or more before bearing any fruit, and its season of ripening is in October. Longipes is by far the better species and comes into bearing at about two years old and when only a few feet high. There are also varieties with variegated foliage of green and white, all of which are very beautiful. E. longipes commands much attention when well-grown and is likely to become a popular shrub.

WRAPPED FRUIT.

At the Experimental Farms, Ottawa, some very interesting experiments have been carried out in connection with storing apples in winter. Some of the points involved were (1) wrapped versus unwrapped fruit; (2) cellar versus groundfloor storage; (3) close versus ventilated packages. These experiments began in the autumn and we e carried through the winter. Twenty-four varieties of apples were included in the trials. The following results are the averages:

WRAPPED v. UNWRAPPED APPLES.

c	Per ent. und.	Comparative weight. Scale of 100.
Wrapped and stored in cellar	42	37
storeroom	36	33
Unwrapped in cellar	32.8	29

storeroom..... 33

Specimens wrapped in paper kept best, there were fewer rotten apples, and they lost least by evaporation. The ground-floor storeroom did not preserve them as well as the cellar

CLOSE v. VENTILATED PACKAGES.

This was tested by packing equal quantities of six varieties of apples in boxes of the same make, with and without ventilation. Half of the cases were placed in the cellar, the other half in the upper storeroom. Results:

Package.	Stored.	Per cent. of fruit sound.
Not ventilated	Cellar	42
"	Storeroom	64.6
Ventilated	Cellar	49
"	Storeroom	45.8

The tight package preserved the fruit best in storeroom, but not in cellar; per contra. the ventilated did better in cellar than in storeroom.

ALEXANDER W. LIVINGSTONE.

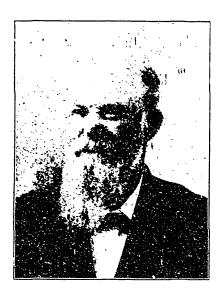


Fig. 1508.-A. W. Livingston, Colo., Ohio.

THE death of Alexander W. Livingstone, which occurred at his house in Columbus, Ohio, on the tenth November, closes a useful and successful career and one of special interest to members of the "gentle art." His work on the improvement of the tomato has been of almost world-wide benefit. Wherever tomatoes are grown Livingstone's "Beauty" and Livingstone's "Favorite" are known. While not a wealthy man, as business men in these days are acknowledged wealthy, the two seed-businesses established by him, and now owned by his sons, one in his home city and one at Des Moines, Iowa, both with reputations for integrity and fair dealing, give evidence of his success in a business sense. The story of his life work is especially interesting to men who practise intensive culture of the soil, showing as it does, how a man self-trained in nature's methods, with quick perception and faculties for close observation; with patience and hopeful-

ness that long years of disappointing experiment did not dampen; and with the experience and skill induced by these years of unproductive work, did at length succeed in giving to the world a tomato fruit like the "Paragon," - to be followed by varieties of even finer quality, -developed from the rough, sour, seedy, and watery fruits that were found growing wild in the fence corners when he was a young lad. The question of hybridization vs. selection for the improvement of fruits and vegetables is also given renewed interest by this event. Mr. Livingstone followed the lines of selection in his work; and while some learned and skilled teachers and writers on Horticulture may hesitate to give full credit to him and his methods, there is no room for doubt about the honesty of his statements regarding his mode of work, and the results of his patient labor speak volumes on the success of these methods. The principle of "selection" is, in these days, taking a prominent place in the methods of fruit and vegetable growers. Working on this line Kellogg, of Michigan, raises and sells "thorough-bred" small fruit plants; Rogers, and other nurserymen, apply the same principle to the growing of the large fruit trees for sale; and Prof. Bailey and S. D. Willard of New York act on it in setting out their private erchards.

Mr. Livingstone's work on the tomato on the lines of selection in the earlier years was disappointing, because the selection was confined to taking the best specimens of fruits for seed, regardless of the character of the plant. Cultivation of the plant and selection of the best fruits for seed had made some improvement in the fruit over that of the wild plant; but while this inferior fruit

ALEXANDER W. LIVINGSTONE.

was sold on a limited scale on the market, and was canned and sold as a commercial commodity as early as 1848, its character was so poor that it is believed that as late as 1865 not an acre of tomatoes had been grown in the United States that would yield one bushel of uniformly smooth fruit. In this year (1865) his attention was attracted to a plant in a field of tomatoes which had distinct characteristics, being stronger than the average of the plants in the field, having heavy foliage, and bearing smooth fruit. His active mind now readily seized the idea of selecting special plants from which to take the best fruit for seed for future crops. Experimental work for a year or two confirmed the correctness of this line of selection, for the improvement of the tomato and further work on the same line was so successful that in 1870 he was able to place on the market the "Paragon," the first uniformly smooth tomato. This placed tomato growing on a permanent and profitable basis. Fifteen new and distinct varieties were originated and introduced by him between the years 1870 and 1897. In the latter year "Honor Bright," a variety quite characteristic in habit of growth and of maturity of fruit was placed on the market, the original plant of which had been found three years previously in a field of the "New Stone " variety.

Who placed the original plant of the "Paragon" in the field of common tomatoes? How did the original of "Honor Bright" come to be growing in a field planted exclusively with "New Stone"? Mr. Livingstone did not pre-

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tend to be able to answer these questions. Perhaps we shall know the answers some day.

Mr. Livingstone was born in 1822, of Scotch-Irish extraction. His earlier years were spent on a pioneer farm in central Ohio; and it was only in 1877 that he removed to Columbus to obtain better business facilities. (He had begun the seed business in a small way in 1056.) Leaving his sons in charge of the Columbus business he removed to Des Moines, Iowa, in 1880, where he established a similar business, but he returned to Columbus in 1890, having transferred the Iowa business to one of his younger sons. His business motto was-"Give every man the worth of his money: and his many business friends bear testimony to his integrity, fair dealing, and courteous attention to their wants in his line.

When a young man he became a member, and shortly afterwards an officeholder in the United Presbyterian church and to the end of his life he continued to take an active interest in its work. took a lively interest in general affairs, and whether in the educational or municipal matters of his home city, or in state or national politics, he was always ready to defend the right and to give battle to the wrong. He was exemplary in his domestic life; and his kindly disposition and broad sympathy enlisted the confidence of the children and young people of his circle of intimate friends, as well as the warm friendship of the elders.

He is dead but his works live after him. ORIGEN.

Ohio.





A WINDOW PLANT BOX.

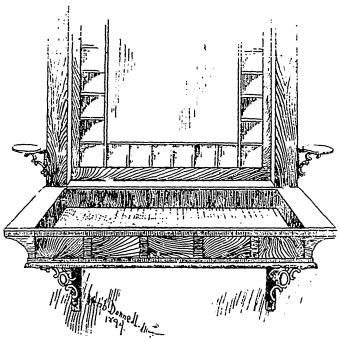


Fig. 1509.--A Window Box.

on a broad shelf or a bench have manifest disadvantages, inasmuch as they are liable to be tipped over and to warp with the constant wettings necessary for the growth of the plants in them. Then, too, if more water is used than the earth will absorb kindly, there will be the drip—

drip-dripping so trying to a careful Martha's soul. The illustration given here does away with all these difficulties. It is fitted to the window sill and supported by strong iron brackets, and is virtually immovable. A zinc tank is fitted into the box and prevents any leakage at all. It can be made easily at any tinsmith's and with small expense. It is well to have the sides of the box widened out into shelves for the ac-

commodation of any small pots desired, and there may be two little round brackets at each side of the window just above the shelves. The whole thing may be made ornamental to the room by using wood that has a pretty grain, with more or less modest ornamentation in the making.—Webb Donnel, in American Gardening.

CLEMATIS JACKMANNI.



Fig. 1510.—Clematis Jackmanni, from photo sent by Miss Henman.

³HE Jackman's Clematis shown in the accompanying engraving is about eight years old. It was spring planted in the spot it now occupies, and was only six inches high; just one shoot and some healthy looking roots. I took great care of it, you may be sure, encouraging it to grow by tying the shoots to supports as soon as they needed it, and every winter covering up the earth surrounding the roots with leaves or straw, and laying boards on top to keep them there. In the spring I took this away and carefully laid on top of the soil, or mixed in with it some well rotted manure and watered all summer the same as I did my flower

beds. It has amply repaid me for the care, and this year the leaves were scarcely visible for flowers, some years the flowers remain for six weeks and there are a few old ones right into October. At first I took it off the trellis work and laid it down along the veranda covering it up same as roots, this I have learnt by experience is quite unnecessary. All that needs doing is to cut away with a sharp knife the part that is dead in the spring, but do not be in too great a hurry to do this, wait till you see what sunshine and warmth will do, the runners look dead when they are not.

HELEN HENMAN, Sec. Thornbury Hort. Socv.



🔰 Our Affiliated Societies. ⊱

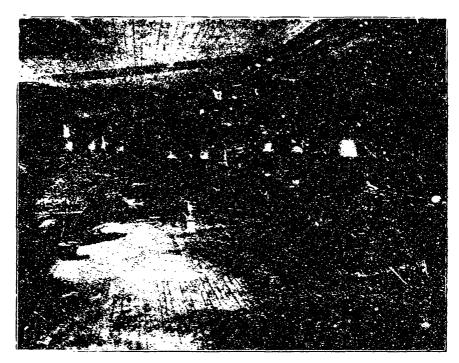


FIG. 1511.—FLORAL EXHIBIT AT WOODSTOCK.

To our Affiliated Societies.

We wish you all a Happy and a Prosperous New Year. We wish to be mutually helpful and to this end we are annually improving our Journal. We invite your frequent Communications for its pages, together with photographs of new or valuable fruits or flowers. We are preparing a Constitution and By-laws for Affiliated Horticultural Societies, which we believe will greatly aid in the conduct of your work.

We would suggest to our Societies the wisdom of holding monthly meetings, say, on the first Monday evening in each month, at which a single paper be read by some member, and fully discussed.

A table of flowers would contribute to the interest of each such meeting.

We hope before long to be able to send you a lecturer on some horticultural topic, and we hope you will get as many of your members out to hear him as you possibly can. We would suggest the giving of a liberal collection of plants for summer biooming, to be given away at a public meeting in April or May. We also advise floral exhibitions in connection with your public meetings, at which award cards may be given, but no money prizes.

In case of a special exhibition you will find it best to have a floral committee to get a list of the promised exhibits from members, and to send a drayman to collect and return all plants according to labels, and to arrange them at the hall. An orchestra would greatly enliven the evening. Members contributing flowers to the exhibit should be admitted free, all others should be charged 10 cents.

OUR AFFILIATED SOCIETIES.

Woodstock.—The Exhibition which was held by the Woodstock Horticultural Society was a great success except in one respect, viz, there was not that support given in by the public which might fairly be expected; still in spite of this a fair amount was real-ized for the benefit of the funds of the Soci-The exhibits, as may be seen by the accompanying photograph, were very taste-fully arranged and reflected great credit on the committee in charge, but, as usual, the work devolved upon a few of the more en-thusiastic members and a number of their lady friends to whose good taste must be attributed the more than usual beauty of the decorations. Only a comparatively small number of the plants were shown in the generally adopted formal manner on benches or tables, etc., the greater number being placed on the floor in the style of raised beds, all on the froot in the style of raised beds, an spaces between being filled in with ferns of larger growth and the edges made of the smaller growing varieties. For two of these beds the whole of the plants were contributed by Mr. Frank Harris (professional) and our secretary, Mr. James S. Scarff (amateur), and it is not saying too much in stating that the latter gentleman made the exhibit of the The largest bed was composed principally of the tropical style of plants, mostly owned by Messrs. D.W. Karn, T. H. Parker, W. H. Van Ingen, F. Mitchell and Mrs. Jas. Hay. Among the other most noticeable exhibits were those of Mrs. McPherson, Mr. Frank Newton and Mrs. W. G. McKay, the latter lady making a most creditable exhibit of begonias. In the cut flower department the best contributions were the very beautiful collection of sweet peas of Mr. Sproat, and the gladioli from that hybridizer, Mr. H. H. Groff of Simcoe, and in the fruit department nice exhibits were made by Messra Croman and Grey. Taking it altogether the Society is to be congratulated on the auccess of their Show, which, without doubt, will do much to encourage that most delightful of all recreations, the practice of the art of floriculture. - W.

GRIMSEY, ONT., Horticultural Society's Floral Exhibit was held in the Town Hall on the 11th. The exhibit of chrysanthemums by Mr. A. E. Cole was excellent, containing a large number of varieties. Measrs. Webster, Bros., of Hamilton, showed ferns, bogonias, orchids and a large collection of calms, besides asparagus sprengeri, ficus elastica, Araucaria, Selaginella and Japan Ivy. The members of the society showed many fine specimens of chrysanthemums, cacti, and other house plants. One great mistake was making it a free exhibition. The hall was evercrowded. It would be far better to have admission tickets, even if they were all complimentary, to be had from the members of the society. Otherwise there should be a small admission fee for all who were not members.

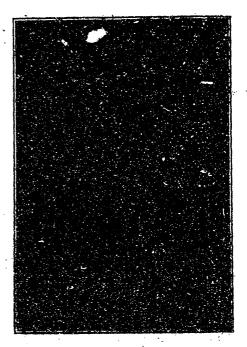


Fig. 1511.—James Lockie, Waterloo.

WATERLOO HORTICULITRAL SOCIETY.—On the eleventh of Novembes occurred the death of Mr. Jas. Lockie, late active president o the Waterloo Horticultural Society. He was, a man who rose by his merit until he was appointed president of the Waterloo Mutual Fire Insurance Co., and having a natural taste for gardening he built for himself a small greenhouse, which contained about one hundred varieties of cacii and many other flowers. Our members will remember how heartily he welcomed our society and Waterloo in December, 1897, and will deeply regret his loss.

Picron.—Mr. Walter P. Ross, the secre-

tary, writes:

"I have much pleasure in stating to you that our Horticultural Society, which is affiliated with your Association, has so far been very successful. I understand that several similar societies were started here some years ago, and only lasted a short time, so I think we should be well pleased. The Horticulturist seems very welcome to our members, and the premiums sent out by your Association are also very much appreciated, as they certainly deserve to be."

Hamilton.—Mr. Hirschmiller. of Hamilton, writes to correct name of W. Holt, which appeared as W. Hull in December number, p. 483 He says that his exhibit was so creditable that it was unfortunate to have his name wrongly entered.

THE CANADIAN HORTICULTURIST.



Fig. 1512.—Home of Mrs. W. J. Marsh.

THORNBURY.—The Secretary of the Thornbury Society, Miss Henman, sends us some little views in that section, and among others a pretty little gem, a winter scene, showing the home of the late Mr. W. J. Marsh, who was the first settler at Clarksburg, and at one time owned the village. His son-in-law, Mr. C. W. Hartman, a banker in the town, has been an enthusiastic friend of our Association and was instrumental in securing the plum experiment station at this place, in the favored Beaver Valley. The grounds shown in our picture are planted with black walnuts, butter nuts, Norway spruces, maples, with a wide stream of clear water running through, over which spans a rustic bridge. On the beautiful lawn the snowdrop and the crocus bloom profusely in the spring.

THE PRINCE EDWARD ISLAND Fruit Growers' Association have become affiliated with us, and receive our literature. This Association is ready to co-operate with us in every good object, for the advancement of the Dominion fruit interests. Already it has accomplished much for the development of the fruit industry in the island, some experimental export lots of fruit having been forwarded by it, and netted the growers excellent results, their Ribston Pippins bringing 20 shillings a barrel in Covent Garden. This was the first time apples had been exported from the island.

CARLETON PLACE. - Mr. Thos. Beall, of Lindsay, a gentleman who takes a deep interest in matters of horticulture for the love of the cause, and who is well versed in the subject, was in Carleton Place, on Friday, Nov. 18th, endeavoring to interest some of our citizens in the advisability of organizing a horticultural society here under the Agriculture and Arts Act, and was so far encouraged that a meeting of those showing an interest was held in the council chamber in the Town Hall on that evening, when Mr. Beall explained very fully the aims and objects of such societies and the benefits which they were designed to bestow upon the locality. The result was a resolution to organize such a society here, moved by Mr. R. Patterson, seconded by Mr. R. Morgan, put by Mr. A. H. Edwards and carried nnanimously. Messrs. J. A. Goth and W. H. Allen were appointed canvassers to obtain members, and the proposition so far is meeting with the best of encouragement, and success is almost insured. A membership fee of only \$1.00 has been decided upon, and as the society will affiliate with the Ontario Fruit Growers' Association, every member will receive a double return for his investment direct in the way of plants, bulbs and literature, aside altogether from the broader features of the society, which are the im-provement of grounds, circulation of periodi-cals treating on horticulture, the holding of meetings to discuss matters of importance on this subject, exhibitions, experiments with bulbs, plants, etc. At the exhibitions prizes are not awarded, and the general public have the privilege of examining all exhibits and obtaining from the expert in charge of the department all needed information as to the manner of cultivating and caring for his particular class. The exhibition thus becomes a school of instruction for the benefit of the We hope to see the new general public. society grow to a successful issue. Parties desirious of identifying themselves with the movement are requested to give their names to either of the canvassers. Ladies have the some rights and privileges as the sterner sex in this movement, and are invited to give it their hearty recognition.

Control of the Contro

ROSE SOIL.

for garden culture is a clay or clay-loam. You can scarcely choose too stiff a clay for your rose garden, providing it is well drained. Clay-loam is generally preferred however; a close, very heavy quality of clay is difficult to keep open and friable, to such a soil the addition of sand, gravel, or humus of any kind, is of great benefit. Sandy soil is generally avoided on account of its failure to retain enough moisture, just at the time of flowering; the free use of cow manure

is a great help to such soils. Good rose flowers may be grown on just about any soil, if proper care be given to the feeding, and it is hardly possible to feed too liberally. A rose enthusiast of our acquaintance, took all the tainted meat from a butcher store, for two summers; burying the whole pieces near the roots of his rose plants, as yet none seemed to have been overfed. Cow manure and bone-meal as fertilizers are still in the greatest favor with rosarians.

WEBSTER BROS., Hamilton.



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

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

ADVERTISING RATES quoted on application. Circulation, 5,000 copies per month.

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.

ILUSTRATIONS.—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.

New Year's Greetings.

THE CANADIAN HORTICULTURIST greets its five thousand subscribers with a sincere Happy New Year! Having now reached the mature age of twentyone, she makes her debut this 1899 in a fine new dress, hoping to win the admiration and esteem of all her friends. Her desire is to serve the best interests of the amateur flower grower, the professional as well as the amateur fruit grower, and the amateur landscape artist. She, therefore, invites liberal contributions of experience in horticulture, with photographs in illustration, that there may be mutual helpfulness.

THE ANNUAL MEETING at St. Catharines was of special interest both to fruit and flower growers. A letter from Mr. Thos. Beall states that an affiliated

Horticultural Society is being formed there. This is the best way of keeping in touch with each other and being of mutual benefit.

THE NEXT ANNUAL MEETING of the Association will be held in the town of Whitby, in response to oft repeated invitations from local fruit men, backed by the Mayor and Corporation of the town.

Tomatoes were not a success in the export of shipments of 1898; indeed they carried better in 1897, and then gave great encouragement; but this season they were reported arriving over-ripe and too soft to sell. We believe the explanation is in the variety, and we have yet to learn which variety is best to grow for this purpose. In 1897 our shippers grew Ignotum for export, and in 1898 the Dwarf Champion, Dwarf Aristocrat

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and some other kinds. This would seem to indicate that the Ignotum is a better shipping variety than the others which were tried. Its fault is that it is rather large for the English market, where we want to offer dessert tomatoes only. One thing was notable about tomatoes, that they are little if any retarded in ripening, by cold storage.

THE EARLY CRAWFORD peach also has been condemned as an export variety. It it too soft and juicy to carry a long distance, so that notwithstanding its great value for our home markets, it must be discarded by the peach grower who is planting an orchard for export. What is the variety that will carry? is the first important question, and what is the quality? is the second. No doubt the Smock would answer the first question; but other varieties superior in quality, and earlier in ripening, may be more desirable.

CONCORD, NIAGARA, AND WORDEN grapes are also useless for export. They do not carry well, mildewing wherever there is the slightest crack, and so tender that they are easily broken. Then their flavor is so obnoxious to the palate of the Englishman, who has always at hand the Black Hamburg, and other varieties of high quality, that it seems foolish to undertake to force them upon the British markets. The only markets for these grapes appears to be in the North-West Territories, providing reasonable express rates can be secured. Our Association has appointed a Committee to make an effort in this direction.

In grapes for export we must choose: (1) our best shipping varieties, and (2) our best flavored kinds. Mr. Robson, of Lindsay, elsewhere commends the *Mills*

for this purpose. The quality is certainly good, and the bunch of fine size, and probably it would carry; but we notice one fault, that the berries do not hold very firmly to the bunch. Lindley is a capital grape, of beautiful color, a good shipper, but the bunch is often rather loose. Wilder should fill the bill, also Agawam, Salem and Vergennes. The latter however lacks flavor.

We hope that in 1899 the export shipments of grapes will be confined to these varieties, or others like them, and that it may be proved to some certainty, whether or not we may export any kind of grapes, as a private enterprise, with any hope of success. Perhaps some of our readers will suggest other varieties worth trying.

OF PEARS we have learned little new in 1898 over our experience of 1897, because of the short crop and the blemished character of much of the fruit. The Bartlett (Williams) has again been carried in good condition, and has been favorably received. The same may be said of Duchess, Anjou, Clairgeau, Boussock and even Kieffer. We notice however that buyers hesitate to buy the last named a second time, its quality is so poor. It is easily grown, easily carried, and fair to behold; but, alas! very disappointing to the eater.

APPLES keep better picked September 26 than October 13, according to Ohio B., II., 4. No doubt a fruit should be handled just a point off maturity, without waiting for the process of ripening-to show itself, which is really a step to ward decay. At Maplehurst we usually begin gathering winter apples about September 20th, finishing up, if possible, by the 20th of October.

POLLINATION will not take place and apples will not set, if blossoms are kept continually wet during the pollination season, as has been proved by experiments at the New Jersey Station.

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THE AMERICAN POMOLOGICAL SOCIE-TY is now working in connection with the U.S. Department of Agriculture. The Society furnishes matter for the report and for fruit catalogue, etc., all of which is printed and published by the Department, as a serial portion of the Department's publications. Notwithstanding its wide sounding title, this Society has small meetings, and lacks the esprit de corps that is manifest in the meetings of the Fruit Growers' Association of Ontario, which latter, by the way, is now the largest and probably the most influential Society of its kind in the During the last ten years our world actual paid membership has grown from 1,500 to 4,150.

THE WESTERN HORTICULTURAL SO-CIETY has published their first Annual Report. They have about fifty members, and a legislative grant of \$100. The Secretary is Mr. A. P. Angus, Winnipeg.

THE ANNUAL REPORT of the Fruit Growers' Association of Nova Scotia for 1898, contains the papers read at the Annual Meeting, Wolfville, last January. The Secretary is Mr. S. C. Parker, Berwick, N. S.

Spraying with Pure Kerosene.— Last summer we tried spraying our rose bushes with a very fine spray of pure kerosene to destroy the green aphis. We used Mitchell's Hand Sprayer, which makes the finest perceptible mist, and had excellent results—the ce were de-

stroyed and the bushes uninjured. We tried the same spray on our Akebia vine with injurious results on the tender young wood, and therefore cannot yet speak as confidently regarding the use of kerosene as we would like. Mr. H. P. Gould, of Cornell, has made some experiments and writes in Bulletin 155 that pure kerosene is likely to seriously injure peach trees, even when dormant; a twenty per cent. solution, however, is safe at any time. Apple trees are less susceptible, often enduring pure kerosene without injury, while 50 per cent. of kerosene is quite safe. The safest time to apply it is on a bright sunny day. A solution of 20 per cent., i.e., 1 part oil to 4 parts water, is harmless to plants and destructive to insects, even to the San Jose scale.

An AGRICULTURAL COLLEGE IN NOVA SCOTIA.—We have just received a clipping from the Halifax Herald, containing an address at Wolfville, by W. C. Archibald, in which he eloquently pleads for the establishment of a first class agricultural college at Wolfville; a college in which, as he says, "any person can find instruction in any study, beginning with agriculture as the chief corner stone."

There is no doubt that this is the true means of correcting the unequal condition of the farmer in the social scale; as well as of securing to him better returns for his work.

OUR PREMIUM PLANTS are giving splendid satisfaction. For example, Mr. D. W. McFarlane, Picton, writes:—The Crimson Rambler you sent me last spring, has exceeded my expectations. It sent out two shoots of between three and four feet in length, with one cluster of roses, fourteen in number. I prize it very much.

THE CANADIAN HORTICULTURIST.

CHESNUTS.—Bull. 42, Delaware, is devoted to the European and Japanese chesnuts. On the whole it would appear that more is to be expected in the near future from the Japanese varieties than from the European. The Killen, one of the former, has already been referred to in these columns.

A PROMINENT NOVA SCOTIAN.—Mr. W. C. Archibald, above mentioned, called at this office on 31st ult., on his way to visit the Agricultural College at Guelph. This gentleman is the chairman of the Board of Control of the School of Horticulture at Wolfville, and now hopes to be instrumental in having an Agricultural College established in his province.

Prince Edward Island.—The President writes that the subject of better storage and ventilation for apples in ocean transport is to be discussed at their next meeting, and they will unite with us in asking legislation on this important condition of success. He says the island has been so much encouraged by her recent export of apples that considerable planting will be done in the coming spring.

THE NIAGARA PENINSULAR FRUIT GROWERS have elected Wm. Armstrong,

St. Catharines, President, and C. E. Fisher, Queenston, Secretary. The next meeting will be held in St. Catharines about the middle of January to listen to Professors Fletcher and Macoun of Ottawa.

THE BURLINGTON FRUIT GROWERS have elected A. W. Peart, Freeman, President, and W. F. Fisher, Burlington, Secretary.

FRUIT PULP would surely be a profitable article of export in seasons when green fruit is high priced; and since it will keep indefinitely, when once properly sealed up, we cannot see why it need be sold during those seasons when it would not bring a margin of profit. Here is a clipping from the Greengrocer, London, England:—

There is a good chance for our Colonial fruit-growers in supplying the London market with fruit pulps. This year French and Italian apricot pulp is extremely scarce. Last year it could be bought at from £15 to £20 per ton; it is now fetching very much higher prices, and we are informed that until June next prices are likely to rule high. It is put up in tins containing about 281b., but the principal requirement is that the pulp shall be quite clean and free from specks. Dried apricots also will be wanted, and will fetch good prices. The pulp must, of course, be boiled with just sufficient sugar to make it keep in good condition.

What is to hinder our exporting raspberry and peach pulp, with profit?

GREEN GRAPE ROT.—When holding institutes in the famous grape belt of Western New York, the subject of black rot of the grape was thoroughly discussed by the growers and also by the scientists. The almost unanimous verdict was, that spraying with Bordeaux mixture pays. In some seasons there is no apparent good result, but there nearly always is a decided benefit. It pays to

clean up all trash, and especially all old, rotten grape clusters, and burn them. Even the tendrils on the vines were known to be a place of refuge for the spores of the black rot, and they were taken off by some careful vineyardists. Cases were related where the disease had spread from a dried berry or two left from former years.

🙀 Question Drawer. 🤼

Fertilizers for Specific Purposes.

~1038. SIR,—What kind of manure, either natural or artificial is best for bringing out in perfection, the distinctively blue colour of the Colorado Blue Spruce.

JOHN M. McAinsh, Belton, Ont.

Reply by Frank T. Shutt, Chemist, Dom. Expl. Farms.

In answer to the above question, I would say that in all probability the striking and beautiful colour of certain Colorado Blue Spruce trees is not caused by any peculiarities in the composition of the soil. Since in the same plantation and upon the same soil, only a few of these trees may develop this remarkable sheen, it cannot be considered as due to the predominance of any one element of plant food.

We, however, know very well that an abundance of nitrogen in the soil, as furnished by barnyard manure, nitrate of soda or sulphate of ammonia, intensifies and darkens the green colouring matter in the foliage of many flowering plants and farm crops. There is also good evidence to show that the presence in the soil of soluble iron, as, for instance, supplied by sulphate of iron (green vitriol), has a marked effect of a similar character.

Whether any change in the colour of the Colorado Blue Spruce can be induced by any such means is extremely doubtful to the writer, but it would be an interesting experiment for your correspondent to apply to the soil about a tree, say, I pound of nitrate of soda, and in another case half a pound of sulphate of iron, and note if any change in the colour of the foliage results. Evenness of distribution would be effected if the materials were powdered and mixed with five times their weight of dry loam and sand.

It may be well to point out that these

intensely blue spruce trees cannot with certainty be reproduced from seed, but may be propagated by cuttings.

Cyclamen.

1039. SIR,—I noticed in the November number a reference to a new style of Cyclamens, and I should be glad to know from your contributor where the seed for this strain is to be obtained, and under what name it is known.

J. A. Robertson, Chateauquay Basin, Que.

Reply by Wm. Bacon, Orillia.

The Cyclamen giganteum grandiflorum can at present be obtained of almost all first-class seedsmen, but if the subscriber should write to Wm. Ewing & Co., of Montreal, Que., and mention my name he would be likely to get the very best that the European, Canadian or American growers have produced. I sold him seeds of my choicest blooming plants at 1½ cts. per seed. Usually they get 27 to 35 seeds in a 25 cent packet.

Hardy Fruits.

1040. S'R,—What are the names of some of the hardiest varieties of apples, pears and plums, that might stand 40° below freezing.

LEWIS WEIGAND, Upper Thorne Centre.

We have not yet completed our list of the best hardy varieties of fruits for the north; and therefore can only make our correspondent a partial reply. Of apples he should try Transparent, Duchess, Alexander, Wolf River, Wealthy, Gideon and Scott's Winter. Of pears, Flemish Beauty and Sapieganka. Of plums, Moore's Arctic, Miner and Kingston.

Ornithogalum Arabicum.

1041. Sir.—Some of the members of the Hamilton Horticultural Society would like to know if any of your readers have forced the above named plant with success.

J. M. DICKSON, Hamilton.

* Open Letters. *

Grapes for England.

SIR,—By to-day's mail I send you a ripe bunch of the Mills grape grown in my garden at Lindsay and gathered on the 21st of September for exhibition purposes. All my late kinds also ripened their fruit this season, namely, Jefferson, Agawam, Vergennes and others, showing the possibility of gratifying the most fastidious taste as to color, flavor and size by a range from Moore's Early, Jefferson, Lady Washington, Mills, even in this latitude, whenever we are fortunate enough to have a favorable season.

May I make a few suggestions regarding the Mills grape and other hybrids. The Mills was produced by a cross letween the European species Vinifera and our standard American varieties, resulting in the production of a grape that has the essential characteristics for export. In the hands of a skilled hybridist there might be produced from it a progeny earlier in ripening which might meet the requirements of the middle, mechanical and laboring classes of England. The vine is healthy, hardy and productive; the fruit is attractive, of fair size both in berry and bunch, and in flavor it is of near approach to the European varieties; the flesh is firm, meaty and adheres well to the cluster. It is a good shipper and a good keeper, an excellent combination, and if to this could only be added the property of early ripening, we might reasonably expect to find a demand for it at popular prices in the old country.

This last summer I had the pleasure of spending about six weeks in England during July and August, and, being interested in fruit, particularly grapes, I noticed the dif-ference in quality, color and size, as accounted for by the district in which the fruit was grown. England receives large importations in season from Spain, Portugal, France, and the Channel Islands, the prices varying according to the size and quality from 12c. to 60c, per lb. I have a strong impression that a consignment of a few tons of such showy grapes as Niagara, Agawam, Vergennes and other good keepers could be profitably disposed of in the latter part of September in some of the large manufacturing towns in the north of England, as, for instance, Leeds, Stockton, Middleboro. Newcastle, Sunderland, each with an average population of about 100,000. In the hands of a person with some knowledge of fruit and an acquaintance with a few leading wholesale fruit men, I believe our grapes could be successfully introduced in this way I would have no fear of making a success of such an enterprise if the grapes were in good condition. W. M. Robson.

Lindsay, Ont.

A New Strawberry.

Sir,—A new strawberry, a chance seedling, was found in Ulster Co., just north of Orange,

and in the heart of the Hudson river fruit region, and was fruited in a large plantation for the first time last season. I gave it a visit and I grew very enthusiastic over it. If you did not see our paper containing an account of it, with a cut, write me and I will send it to you. It will be on the market next spring—per haps it is now. I have a short row in my home garden which the originator's representative gave me, but I am in honor bound not to give or sell any plants until after he has disseminated it, which I believe will be in the coming spring.

I think it would please you if you could see it, and I hope you buy a few plants; two or three dozen next spring and try it. I can say this for it in its home:—Superb foliage, ank grower, perfect flower, berry large and round, regular in shape, very solid, crimson in color, and solid enough for a first-class shipper.

As an indication of its vigor, let me say, that last summer I set out a row of Wm. Belt in my garden, grown there, and they made a better than average growth. Two weeks later I set out the Gibson and they soon passed the Wm. Belt, larger plants, more runners and an altogether ruggeder plant. Of course, I have no interest in it; but I thought you might like to try it. The propagator's address is Marlboro', N. Y., C. H. Baildon, and he is a very honorable man.

E. G. FOWLER, Port Jervis, N.Y.

A Sham Pear.

SIR,—I am taking the liberty of sending you a little piece of news that I think might have escaped you while in the city on Tuesday.

There is a gentleman here, who grows some very fine pears that have long been noted prize winners at the country fairs. This gentleman very kindly sent a few specimens to the Horticultural exhibit; these were seen and admired by quite a number of people; on of the admirers is a gentleman who has a hobby for mock-orange gourds; he at once declared he could beat the pears all hollow.

The joker hustled home and picked the largest and best specimen of gourd he could find, rubbed a little vinegar on the side and brought out a beautiful color; he then packed it very carefully in a neat little box of cotton batten, so as to give the impression that it was a dead ripe pear (in reality to hide the bottom of the gourd, which is very unlike a

pear).

The "pear" was then brought to the show, where there was much discussion as to its variety and mode of culture. The prize winner declared that it was wax, another that it was wood and tinted. But the owner would not allow his precious (pear) to be taken from the box, and so the joke went on, until some one that knew, 'let the cat out of the bag.'

And now the horticulturists are wondering who it was that did not know a gourd from a pear.

R. B. C., Hamilton.