

Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

- | | | | |
|-------------------------------------|---|-------------------------------------|---|
| <input type="checkbox"/> | Coloured covers /
Couverture de couleur | <input type="checkbox"/> | Coloured pages / Pages de couleur |
| <input type="checkbox"/> | Covers damaged /
Couverture endommagée | <input type="checkbox"/> | Pages damaged / Pages endommagées |
| <input type="checkbox"/> | Covers restored and/or laminated /
Couverture restaurée et/ou pelliculée | <input type="checkbox"/> | Pages restored and/or laminated /
Pages restaurées et/ou pelliculées |
| <input type="checkbox"/> | Cover title missing /
Le titre de couverture manque | <input checked="" type="checkbox"/> | Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées |
| <input type="checkbox"/> | Coloured maps /
Cartes géographiques en couleur | <input type="checkbox"/> | Pages detached / Pages détachées |
| <input type="checkbox"/> | Coloured ink (i.e. other than blue or black) /
Encre de couleur (i.e. autre que bleue ou noire) | <input checked="" type="checkbox"/> | Showthrough / Transparence |
| <input type="checkbox"/> | Coloured plates and/or illustrations /
Planches et/ou illustrations en couleur | <input checked="" type="checkbox"/> | Quality of print varies /
Qualité inégale de l'impression |
| <input type="checkbox"/> | Bound with other material /
Relié avec d'autres documents | <input type="checkbox"/> | Includes supplementary materials /
Comprend du matériel supplémentaire |
| <input type="checkbox"/> | Only edition available /
Seule édition disponible | <input type="checkbox"/> | Blank leaves added during restorations may
appear within the text. Whenever possible, these
have been omitted from scanning / Il se peut que
certaines pages blanches ajoutées lors d'une
restauration apparaissent dans le texte, mais,
lorsque cela était possible, ces pages n'ont pas
été numérisées. |
| <input type="checkbox"/> | Tight binding may cause shadows or distortion
along interior margin / La reliure serrée peut
causer de l'ombre ou de la distorsion le long de la
marge intérieure. | | |
| <input checked="" type="checkbox"/> | Additional comments /
Commentaires supplémentaires: | | Continuous pagination. |



J. A. P. photo.

THE "STEVENSON HOMESTEAD" AT GUELPH, ONT.

THE
Canadian Horticulturist

Vol. XIX.

1896.

No. 9.



PROMINENT CANADIAN HORTICULTURISTS.—XXVI.

REV. E. B. STEVENSON, GUELPH, ONT.



HERE are men who are said to ride hobbies because, whatever their regular avocation may be, they have some favorite line of study or pursuit in which they are deeply interested and which seems to carry them away at times entirely from the business of life. This is commendable too, in many instances, especially where, as in the case of Mr. Stevenson, the hobby is such as to be a means of physical recreation and mental refreshment. So much has he become engrossed in the study of the strawberry, that it has become to him a delight, and every new variety produced by his experimental hybridization becomes another addition to his pets.

Last year Mr. Stevenson was appointed experimenter in strawberries for the Provincial Department of Agriculture, and a valuable report from him has just been published in the Fruit Growers' Report for 1895. It was in order to see some of his favorite varieties that the writer visited Guelph on the 10th of June last. Maplebank, at Guelph, is the early home of our strawberry specialist, and is still occupied by his father, Mr. William Stevenson, and here the pet varieties of strawberries have also a permanent home.

Maplebank is situated on a beautiful elevation commanding a fine view of the City of Guelph. The house is antique both in structure and in furnishing, and is surrounded by a spacious and interesting yard planted with

some horticultural varieties. From the point of view in our photograph a handsome weeping elm partially hides the front porch from view.

Mr. Wm. Stevenson, the occupant of this home, has always been passionately fond of the cultivation of fruits and flowers. For twenty-five years he conducted the Maple Bank Nursery, and then, retiring from that, gave his whole attention to growing fruits and especially strawberries.

He has twice been elected Mayor of Guelph, viz., in 1885 and again in 1886, besides holding many other prominent offices.



FIG. 984.—REV. E. B. STEVENSON, GUELPH, ONT

Under these favorable surroundings and conditions our strawberry experimenter grew up, and became an enthusiast in the study of it. To quote his own words :

“As for myself I do not remember the time when I did not take a great interest in the strawberry. I always thought it the queen of fruits from the time when as a boy, I used to go down cellar with a bowl and spoon and skim off

some cream from mother's milk pans (for we kept a cow), and then went to the cupboard and got a slice of bread and butter and some sugar, then went to the



FIG. 985.—“DELLA K.”

strawberry bed and feasted ; from that time till now I have loved the strawberry

above other fruits ; for some years past, seeing the way in which other fruits were being improved, I asked myself the question why not the strawberry? and on making enquiry as to the parentage of some of the new ones, I was nearly always met with the answer : 'A chance seedling just found growing,' or 'I found it in a fence corner,' or on a 'stone heap.' Not very often could



FIG. 986.—CLYDE.

the introducer tell its parentage, and so I thought it strange that some one had not tried to improve it on some systematic principle, and so I have been trying for a few years to do so. I have a few very fine seedlings, I enclose one I have named 'Della K ;' it is a seedling of Sharpless. The picture is the exact size of the berry and bunch."

Mr. Stevenson graduated in Arts at Victoria College, in 1879, at the age of thirty, taking first class honors in Natural Science, and afterwards spent one year in post graduate work.

Speaking of his pets, Mr. Stevenson says: "Among the seedlings I have now growing are Crescent crossed with Marshall; Bubach crossed with Clyde and Woolverton and Brandywine; Haverland crossed with the same, viz., Clyde, Woolverton, Brandywine and Belmont; and seedlings of Timbrell



FIG. 987. —HAVERLAND.

crossed with Marshall and Brandywine, some of these are grand. Edith (the largest) crossed with Clyde and Woolverton; Mary crossed with Clyde and Woolverton; Princess crossed with Marshall. Seedlings of Haverland crossed with Belmont, crossed with each other; some of these that fruited this year are grand. Some of the berries were $2\frac{1}{2}$ inches in diameter, good color and firm:

some of them very promising. I have some 215 varieties set out in test plot to fruit in 1897, in addition to many seedlings of the above crosses."

Among the many varieties of strawberry in fruiting at Maplebank, which are before the public already, Mr. Stevenson prefers two for the Commercial plantation, viz., Clyde and Haverland. The Clyde is a seedling of Crescent Cumberland, which was originated by Dr. Stayman, of Kansas. A bunch grown by Mr. Stevenson is here shown exact size of specimens, and the fruitfulness on his grounds this season was the very highest degree. He classes it second early in season; berry large, firm, color bright scarlet, and quality good. One of the best general purpose berries

Another valuable market variety and one already largely grown by fruit men in some parts of Ontario is the Haverland, a bunch of which from Mr. Stevenson's plantation is shown full size in our engraving. This is a mid-season variety, which originated in Ohio. Mr. Stevenson says of it: The Haverland is magnificent in its foliage, most numerous in runners, and enormous in quality of fruit. Berry large, to very large, somewhat soft; color rather light; quality fair. A fine berry for the home garden and near market.

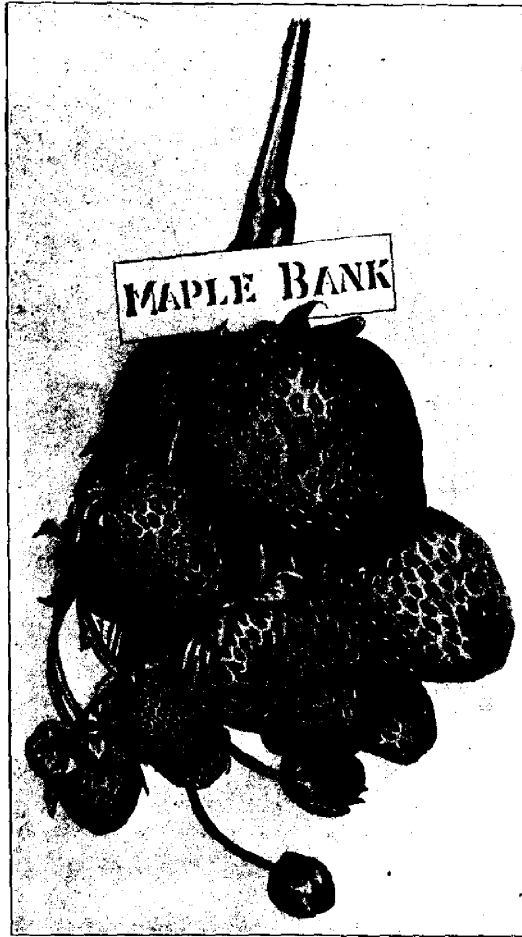


FIG. 988.—MAPLE BANK (FROM PHOTOGRAPH.)

No doubt as the result of Mr. Stevenson's careful work in hybridizing, many excellent varieties will be originated, better adapted to Ontario than any foreign kinds. One promising seedling, originated by Mr. Wm. Stevenson, was named Maplebank, a branch of which we photographed, natural size.

This was thought to be a cross between Crescent and Wilson. The plant is a strong vigorous grower, making a wide matted row, and productive. Berry large, firm, quality best; season medium to late.

GOOSEBERRIES FROM F. W. PORTER.



URING the first week in August, one of our subscribers, Mr. F. W. Porter, of Mount Forest, sent us a box containing exceedingly fine samples of gooseberries. The season with him must be much earlier than at Grimsby, as all varieties were then over in this section for more than a week. Mr. Porter's samples of *Whitesmith* were superb, larger than we can grow on our sandy soil in the Niagara District. It is somewhat inclined to mildew with us, but Mr. Porter reports that he had not a single mildewed berry, and such a crop as never before, some bushes yielding eleven quarts, and all his bushes averaging eight or nine quarts each. The samples of *Whitesmith* were so fine, that we photographed one branch for the public benefit, exactly the same size as the original. The day is now about over when we can sell small gooseberries in our markets. This season we can scarcely give away small gooseberries, and even Downing and Smith, two fair-sized berries were a drag on the market at four and five cents a quart, while large berries like *Whitesmith* sold at six cents or over.

Mr. Porter writes as follows: "The *Triumph*—not so well-known—deserves special notice. To say it was heavily loaded would not be full justice; every branch was a marvel of itself, but its greatest beauty lay in its uniformity of size. The stems are a little on the slim side, more so than *Whitesmith* and others. The quality is not the highest, still it is good; but for profit and appearance it ought to take well with the public, and Stone & Wellington deserve credit for disseminating so good a variety. I ought to state that as yet it shows no sign of mildew; I wish I could say as much in favor of the *Autocrat*, it has only two good qualities, namely, a good grower with stiff shoots and nearly mildew proof. I cannot agree with Mr. Spillet about having the taste of the *Green Gage* plum. I don't consider it equal to either *Industry*, *Whitesmith* or others in my possession, it has no pronounced flavor, but worse than that it is a poor bearer and of only medium sized berries; I did not think it worth while to send you specimens. The fruit drops as soon as ripe.

"The *Industry* being also long in the field does not require any remarks more than to say that it is not the early berry that the English accounts give of it.

"Coming to the much talked of *Lancashire lad*--as this is the first season of its bearing with me—I cannot say much of its merits. I was somewhat disappointed in its flavor. I expected something better. Its berries are large and although hairy at first, they become almost smooth when ripe. I agree with Mr. Spillet with its being a slow crooked grower, its leaves are a light green, and it is much inclined to mildew.

The yellow variety sent to you is a cross between a smallish English yellow variety of good quality with Whitesmith. Its merits are its being non-mildewing, a fine strong grower, upright in growth with best foliage I know of. The berries are well protected from frost and is pretty in the garden. But it is not of high quality.

The variety sent in the last batch designated "The noblest Roman of all" is my favorite. It is a seedling from Whitesmith, but it is rounder in form, whiter in color and the veining different; very juicy with enough tartness to give it a pronounced flavor, making it an excellent preserver. I had no large specimens to send you, they being all pulled; it is a strong grower with large healthy foliage; no mildew thus far, also productive. Another specimen sent, of very good quality, and a heavy bearer; size medium, and non-mildewing, well-worth growing. I have some other good varieties I would liked to have sent you but it was too late. I will make a few remarks on the currants: I was too late in sending them as the currants get bitter when left long on the bush. The samples sent attached to the branch, also those sent without the



FIG. 989.—WHITESMITH GOOSEBERRIES, GROWN BY F. W. PORTER, MT. FOREST.

branch, are seedlings from the Cherry, you could judge of the enormous quantity of the one as well as the size of the other. Though not so productive, it is very large, and the quality of both are about the same as the Cherry. The other sent, attached to the branch, is about the size of the Victoria, very productive and of the best flavor of any red that I ever tasted. All of the three sent are straight, strong growers. The last variety I call the Foundling, not knowing its origin.

"Coming to describe the *White*, I would say it is a seedling, its origin I cannot tell, but it is a beauty in every way, a fine erect, stout grower like the Grape or like Fay's Prolific, the fruit stalk is a good length the bunch is longer and the size of the berry more equal than the Grape.

"'Last but not least,' comes the *African Queen*—the black currant—I think it is a seedling from Lee's Prolific (a misnomer, it ought to have the prefix un added to it. I have been trying for the last twenty years to get bushes that would pay for the land they occupied.) I have had several varieties of black currants, but they were failures. I thought when I got the Saunders I was in for something good but thus far I have been disappointed. It may do better on a different soil. I am greatly pleased with my seedling, in fact I have never seen anything like it; of course from what I sent you you can judge of its merits. It was too long on the bush to have its good flavor."

METHODS OF PICKING AND PACKING GRAPES.

PICK in crates, crates setting on stools. Handle crates carefully, and set crates in shade if they are not immediately drawn to the storage room. Drive if possible without jolting the load even if on springs. The slightest jar cracks fresh picked grapes, and thousands of dollars are lost in this entire grape belt every year by the carelessness of workmen in handling grapes. Crates 12 inch by 24 inch outside, and 6 inch sides, sides solid and even with top of ends, bottom tight, will handle best, pack up best, and keep the fruit in best shape if stored for any length of time. Up to the middle of October pack as fast as you pick, and get to market as quick as you can. Girls will pack 200 nine pound baskets of fresh picked grapes as easily as 100 baskets of wilted grapes that have stood several days. Three-fourths of a cent per basket for packing fresh picked grapes is better wages than one cent per basket we used to pay when grapes were allowed to stand from 24 to 48 hours to wilt.

Provide a cool storage room and hustle your grapes in after the middle of October, and save exposure to frost and severe storms.—Fruit Growers' Journal.

MOUNT TACOMA.



ROBABLY the most magnificent scenery in the world is afforded in the region of the Rocky Mountains, near the Western Coast of our Continent. What grander view could there be than the one shown in our engraving of Mount Tacoma, one of the highest mountains of the cascade range of the Sierra Nevadas? Not far from it the Northern Pacific R. R. crosses the Stampede Pass, at an elevation of 3,600 feet, and winds down toward Puget Sound, which is considered the most beautiful sheet of salt water in the world. It is along this line that this view was taken, and the only one of many that might be models for the most expert artists in the world.

We quote a paragraph from a contemporary concerning the lofty mountain above mentioned :—

“Mount Tacoma, prince of that royal family, the Cascades, highest of them all, clad in his robes of perpetual white, is seen from Tacoma and Olympia as from no other points. Towering above the clouds, to-day seeming but twenty or thirty miles distant, to morrow seeming an hundred ; a pure white in the noon-day light, turning to a beautiful pink with purple foot-hills in the light of the setting sun, and then fading to a silver gray, unsympathetic but regal in grandeur, this fine mountain is in itself the building of a great empire, whose private and public life cannot but take color and character from its sturdy and stately presence.”

Regarding the name of this mountain, Meehans' Monthly says :—
 “Residents of the North-West Coast are exercised about the name of the great mountain known in geography as Mount Ranier, but which they insist shall be called Tacoma. Vancouver was the first geographer who saw it, and under geographical rules had the right to give it a name. He named it after a friend in the Old World named Ranier. The Indians had long ago known it as Tacoma, and the effort is to set aside the geographical name in favor of its ancient Indian one.”

Mount Tacoma is possibly one of the most remarkable of mountains. The glaciers which flow from it are among the most wonderful in the world. It furnishes the water for a large number of western rivers.

Those who are well versed in Indian history conclude that the Indian inhabitants of this part of America came from Alaska, and that from this point the immigration was southwardly until they eventually settled ancient Mexico and Peru. That the Indians of Alaska came from Asia is pretty clearly settled now. The line of their journeyings seems to have been all along the Pacific coast. Tradition among the Alaska Indians, describing the country from which their forefathers came, seems to fit Kamatschatka so clearly that there is little room now for doubt of the Asiatic origin of the Indian race.



FIG. 390. -- MOUNT TACOMA.

THE BANE AND ANTIDOTE.

The Army Worm and Moth and Its Deadly Enemy.

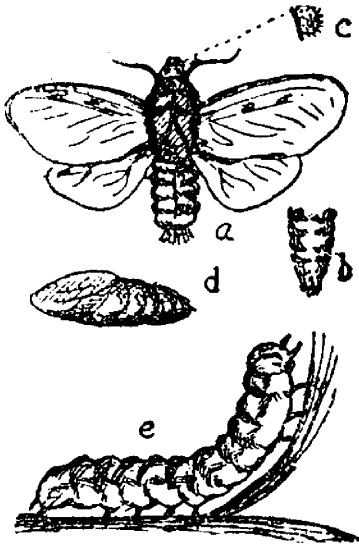


FIG. 991.—Army worm (*Leucania unipacta*), about natural size. a, male moth; b, abdomen of female; c, eye; d, pupa; e, caterpillar.

skin of the caterpillar, to which they adhere firmly. When the young maggot hatches, it eats its way through the skin into the body of its host and thrives at its expense.

In July last Prof. Panton, of the O.A.C. Guelph, found the army worm in great abundance in the vicinity of Port Colborne; and also Guelph. Every green thing was being devoured along the path of the army of worms which, however, had then nearly closed their campaign for the present season.

In 1888 Mr. Fletcher, in his address to the Entomological Society of Ontario, referred to the army worm (*Leucania unipacta*) as being common in Canada, but rarely causing serious damage. He said:

A fact which has frequently been observed with regard to these caterpillars, and one which gives great comfort, is that whenever they increase largely in numbers, they are invariably checked by the appearance of friendly parasitic insects. It must be remembered that all insects are not injurious, but on the other hand that many are very beneficial, preying upon and destroying injurious kinds. These belong to different natural orders * * * Of the Diptera or two-winged flies, there are several species of *Tachina* flies, which closely resemble our common house flies. These lay their eggs on the surface of the



FIG. 992.—Yellow-tailed *Tachina*-fly (*Exorista flavicauda*), which is parasitic on the army worm. (Double natural size.)

Kieffer a Good Market Pear.—It is remarkable that the only pear that is exhibited freely on the fruit stands of Philadelphia, during midwinter, is the Kieffer. This is in abundance everywhere. Whatever critics may say of their quality, somebody likes them, as they sell freely. A good point with them is that they do not rot easily by handling, as other pears do. They rank with the apple in this respect.—*Meehans' Monthly*.

HENS IN THE ORCHARD.

Many farmers or orchardists would like to have hens in the orchard for the good their presence would do the trees, were it not that the fowls must be kept confined because of the damage they would do the adjacent garden and flower

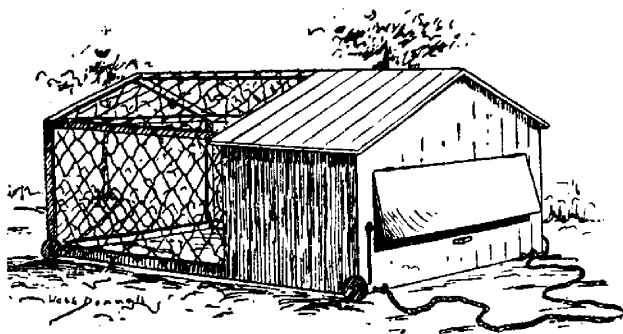


FIG.—993. MOVABLE SUMMER POULTRY HOUSE.

beds. The sketch shows a way to keep one or more flocks of hens in an orchard. A light, low house, made of half-inch matched stuff, has a wire run attached to the end, as shown in the illustration. The house has no floor. The eggs are gathered by opening a hinged board in the end. Low trucks are attached to the corners so that the whole can be moved occasionally to a new location. It can thus be moved up and down beside the row of trees, stopping for a day or two under each tree, scratching, fertilizing the ground and destroying insects. The fowls all do well under such conditions, and their presence will be of great value to the orchard. The lower sill of the sides of the house should continue out and form the base of the sides of the run.—Amer. Agriculturist.

The Phylloxera in Canada—This morning (3rd August) Mr. Chester Hunter, of Grimsby, brought us a branch of a grape vine badly affected with this insect, which we photographed in order to show our readers how it affects the foliage and to warn them against it. The leaves are covered with galls; each of which contains two or three full-grown insects and a hundred or more eggs. Cutting down through one of the galls these eggs could be plainly seen with weak power of the microscope. As the eggs begin to hatch the gall becomes overcrowded, and the full-grown lice emerge through the opening in the upper surface of the leaf and soon cause new galls in which they take up their abode. Mr. Fletcher, of Ottawa, has kindly written for us a note on the Phylloxera, which appears on page 308, where also see engraving above referred to.

BLIGHT ON THE APPLE AND PEAR.

BY JOHN CRAIG, HORTICULTURIST, EXPERIMENTAL FARM, OTTAWA.



URING the past five weeks a large number of specimens of apple and pear twigs killed by "blight," variously known under the names of "Apple Blight," "Pear Blight," "Twig Blight," and "Fire Blight," have been received at this office. The leaves have a brown, scorched, but not shrivelled, appearance; the bark, on the other hand, is shrivelled and withered, in addition to being discolored. The presence of this disease has been noticed in America for more than 100 years. It is easily recognized by the manner of its growth and development upon apple trees, which is usually as follows:—When the tree has made a growth of a few inches, the leaves on some of the young shoots may be observed to suddenly turn brown, in a single night, as it were. If the tree is watched closely, this browning will be found to extend downwards upon nearly all of the twigs which have been attacked. In some cases the discoloration of the bark ceases when a larger branch is reached; in other instances the large branch becomes affected, communicating in turn the disease to the stem, in which case the death of the tree may be looked upon as a certainty. Often, however, the scorching and browning affects only the young terminal twigs. Crab trees are frequently affected in this way. It is the least injurious form of the disease. Pears are often attacked in the main branches and on the stems, the disease finding entrance through spurs and tufts of leaves. A tree attacked in this way usually succumbs. Until 1880 nothing was definitely known regarding the nature of the malady. In that year Prof. Burrill, of Illinois, published the first authoritative account of the bacterial or "germ" origin of this disease. Prof. Burrill's investigations were afterwards abundantly corroborated by the careful work of Prof. Arthur at the New York Experiment Station. The disease is known to be caused by a bacteria now recognized in science by the name of *Micrococcus amylovorus*. Prof. Arthur proved the contagious character of the disease, and also its bacterial nature, by demonstrating that it could only be transmitted artificially by using the juices of branches which contained the characteristic bacteria. This disease finds most congenial conditions for rapid development in fast growing varieties, having an abundance of succulent tissue. It usually obtains an entrance by way of the youngest leaves, or through the blossoms. At this time, too, wood is in an immature condition. The bacteria causing the disease may remain alive in dead branches on the tree, and also in those which have been removed, and in this way communicate the disease to healthy trees. In addition to apple and pear trees, this disease attacks other members of the rose family, notably Hawthorn and Mountain ash.

Blight was prevalent throughout Eastern Ontario and the Province of Quebec in 1892 and 1893. This year it has caused much damage to apple and pear orchards in Southern Ontario, and has been more or less injurious throughout the whole of Ontario and Quebec.

Remedies.

No directly effective remedy is known at the present time. The following, of a preventive character, should be applied:—

1. Prune off and burn all blighted branches as soon as noticed, cutting 12 or 15 inches below the diseased wood, as shown by the blackened and shrivelled bark, painting the cut surface with linseed oil.
2. Follow such a system of culture as will tend to produce a moderate growth of well ripened wood.
3. If an orchard which has been cultivated previous to the attack is seriously affected, try seeding to clover for a year; this, coupled with a liberal top dressing of wood ashes, may tend to lessen liability to the disease. In a case of this kind avoid using barnyard manure.
4. Grow, as far as possible, the varieties which in that particular locality have shown greatest immunity from the disease.
5. In Southern Ontario—where they are not specially needed—Transcendent and Siberian crabs often act as breeding places for the disease, and for this reason should be destroyed.

Further information regarding the disease may be found in the Report of the Horticulturist of the Central Experimental Farm, for 1893. A few copies of this may be had on application to the Director, or to the Horticulturist, Central Experimental Farm, Ottawa.

NOTES—SIMCOE EXPERIMENT STATION.



CHERRIES.—Some of these two years planted, have borne a few cherries this year. The Dye House and Vladimir were the ones that matured enough specimens to enable one to judge of their merits. These two seemed to be very much alike. They are sour cherries, and will be suitable for canning. When thoroughly ripe are very handsome in appearance. Some specimens of the Dye

House were left till dead ripe, and were a very dark red, nearly black, of a good size, and might easily be mistaken for oxhearts; but they are pretty sour. However, I hope to have enough next year to test their canning qualities. They are quite thrifty here, and will likely be a valuable acquisition in this section. I tested several of the old varieties some years ago, red, yellow and black, such as Black Tartarian, Governor Wood, and others, but never succeeded in growing anything better than the Early Richmond.

If these Russian varieties, of which I have ten under test, prove to be of fairly good quality, they will pay well to grow in this section; as the growing of cherries has been almost entirely abandoned of late years. They seem inclined to bear early, and so far have proved hardy. They have been exposed to a temperature of 26° below zero without injury. The testing of these cherries will be a very interesting and important part of the work of this station.

Raspberries.—The Columbian raspberry is a prodigy. It surpasses in productiveness anything that has come under my notice in the raspberry line. In appearance it is another edition of the Shaffer, but does not come up to it in quality, neither for canning or eating fresh. I would not advise the planting of either of these varieties for market, as there seems to be a prejudice against them on account of their color, and they would not carry as well as the red varieties; especially is this true of the Shaffer. The Columbian is firmer, but would not be satisfactory as a shipper.

But for the home garden both of these varieties should have a place. They will give splendid returns under fair cultivation. The following would be a nice selection for the home garden: Cuthbert, Golden Queen, Columbian, Shaffers, and the "Older" Black Cap, with a few plants of the Marlboro' for early use.

G. C. CASTON.

FRUIT STORAGE.



It is not necessary to go to any extravagant expense, and, besides, it is not needed. Select a gravelly hillside. Excavate to the required size and depth, and then wall it up with stone picked off your fields. Then roof it over. A double roof is best, built in the following manner: Lay a plate on the wall and put on rafters and sheathing as for a roof. Cover sheathing with building paper. Over this lay a second course of rafters with sheathing as before. Fill in between the two courses of sheathing with sawdust. Then put on the shingles. Before shingling a good ventilator should be put in, running up through the roof. Then with double doors to your cellar you are prepared to hold your apples. Care should be taken to see the cellar is well drained and well ventilated. The main thing is to keep as near an even temperature as possible. In warm weather in the fall, after the apples are put in store, the ventilators should be opened at night and closed in the day time. All the work on a cellar like this can be done with the ordinary help on the farm. It does not require a skilled mechanic to excavate the cellar, to make the mortar or lay the wall. The roof and doors you can build as well. The work can be done at odd times during the summer, when you would not usually be otherwise engaged.

A good and satisfactory storage for your fruit or vegetables can be put up

even cheaper than the one I have described, and it would pay for itself almost the first season. After excavating the cellar and building the wall as before, set up a row of posts along the centre the long way of the cellar, high enough when a ridge pole is put on to support the upper ends of the rafters. Cover the rafters with rough boards as for roofing, and then cover with dirt, well packed down and thick enough to turn the water and keep out the frost. The timbers should be of good size, sufficient to sustain the weight of the roof.

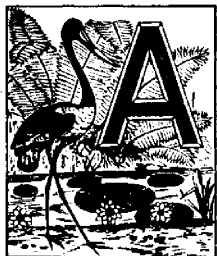
A fruit house entirely above the ground can be put up at not a very large cost, in which an even temperature can be maintained and which will keep out the frost, as follows: Prepare a good tight foundation of stone for the building. Use 2 x 4 inch studding for the sides. The sides should be about eight feet high. Sheath on the outside of the studding with inch lumber, and cover this with another course of studding, sheathing and building paper. Do this until the wall has three air spaces. The roof is constructed in the same way to protect from heat as well as frost.

The writer has recently constructed a cellar and fruit house over it, as follows: The floor between the cellar and fruit room above is laid with 2 x 8 joists, ceiled above and below with inch boards, and the space between it is filled with sawdust. The studding for the sides are 2 x 6, eight feet high. Outside it is sheathed lengthwise with inch lumber, and on this is a layer of building paper. Then comes a course of inch pine siding and battened. On the inside a layer of building paper is tacked to the studding and then a course of inch lumber. The six-inch space between the two courses of sheathing is filled with sawdust well packed. Building paper is tacked to the under side of the rafters, and an inch pine ceiling is put on, and the four-inch space between the roof boards and ceiling is filled in with sawdust. It is ventilated with windows at each end.

The main points to be kept in view, when planning a storage place for our apples, are good drainage, good ventilation and security from heat and cold. Here in this climate we are very apt to have, in the late fall, and also during the winter months, warm spells of weather, and during these warm spells the ventilators should be opened at night after the atmosphere has become cool, and kept closed during the daytime. In this way nearly an even temperature can be maintained, not so low, perhaps, as in a costly cold storage plant, but sufficiently low to meet the requirements of the average grower.—From a paper by J. M. Purdy, read before the Minnesota Horticultural Society.

Pears.—The crop is ready to pick as soon as the color begins to change and the stem will part readily from the branch. The ripening process should then be continued indoors in a still, dark room, which must be cool for slow ripening and warm for quick ripening. For marketing especially fine fruit, use small packages. Bartletts may be picked while hardly more than half grown. They will ripen up for market, and sometimes bring a much better price than the later, fully-developed and matured pears, while those left on the tree will come out all the finer, and perhaps continue later in good condition.

COLD STORAGE FOR FRUITS.



At a meeting of Massachusetts horticulturists, Dr. Jabez Fisher, in speaking on "The Preservation of Fruits by Cold Storage," said he had first begun to experiment in this direction more than 20 years ago, when he placed a crop of pears in an ice-house, and held them back from the market for several weeks, and in that way realized a profit twice as great as usual. For the grower of small fruits, like strawberries and raspberries, he said, cold storage is not at all practicable. But for the preservation of the winter apple, it is a method shown to be very valuable and certain to add much to one's income from the fruits he raises. He said :

When you are ready to harvest your apple crop, the thing to do is to discover how to get the most money for it. If you have a good cellar, you can keep apples there with good results. A building can be constructed which will accomplish the same purpose. It should be built with double walls, with a space of one foot between. This space should be filled with planing mill shavings. An earth floor will answer, although a cement floor is better. There should be no windows in this structure, and there should be a double door on the north side. There should be a good-sized ventilator in the centre of the building.

When you are getting ready to store your apples, you want to take advantage of every cold night to reduce the temperature by leaving the doors open. Of course there will be some nights when the temperature in the building will be cooler than in the open air. On such nights keep the door shut. After the apples are picked, I prefer to put them into bushel boxes rather than into barrels. After the apples are picked, the sooner you get them into the cellar or storage house, where there is an equable temperature, the better. In packing apples for the market, never put a large apple and a small apple side by side. Apples that are nearly of a size will sell much more readily and for a better price than when they are ill assorted.

Chrysanthemums.—The thinning of buds should go on from day to day. The value of the crop depends on thinning. One good flower is worth ten poor ones. The plants have now branched out into leaders and laterals. The leaders, of which there may be from three to five, will form what is termed the crown bud, one bud on each stem. The plant will branch again, forming leaders known as terminals, with buds known as terminal buds, or the termination of the plant's growth. As a rule the crown buds form the best flowers, but if they form too early, let the terminals grow and take out the crown bud. Nip out all buds except those in the centre of the cluster. Keep show plants staked and tied up to induce shapeliness. Give all plants plenty of water and liquid manure twice a week.

THE GREEN GRAPE-VINE SPHINX.



HERE may frequently be found on grape-vines of all varieties during the summer, caterpillars shaped as in the cut given herewith. When full-grown this caterpillar is about two inches in length with a small head. The body is green and is covered with small yellow dots. Along the sides are seven pale stripes sloping backwards and shaded behind with dark green. A white stripe also margined with dark green runs along each side from the horn at the end of the body. The series of spots shown on the back consists of blotches of pale lilac, bordered with yellow. The anal horn, which is nearly a quarter of an inch long, is blueish spotted with black in front, and yellow behind. When at rest the head and the next two segments are drawn back into the fourth and fifth, which are much distended. This habit is also characteristic of the Achsmom Sphinx, a much larger caterpillar, which is occasionally found on grape-vines with the Green Grape-vine Sphinx. It, however, may be at once recognized by its ruddy color, and from the fact that when full-grown, instead of the anal horn, it has merely a polished tubercle.

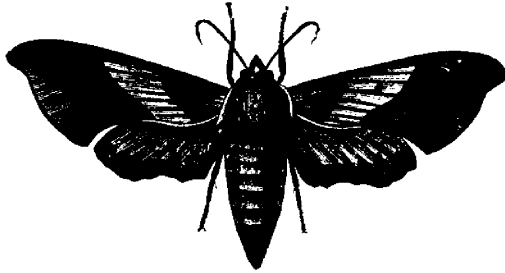


FIG. 994.—THE GRAPE-VINE SPHINX.

When the Green Grape vine Sphinx is full-grown, it leaves the foliage and forms a loose cocoon on the ground or near the base of the vine on which it has fed. The chrysalis is of a pale-drab color finely dotted all over with black points. The breathing pores along each side are black and conspicuous. There are two broods of this insect in the year. The moths from the first brood appear in July, and these lay eggs the caterpillars of which attain full growth in September, pass the winter in the chrysalis state and appear as moths in the following May. The perfect insect is a very beautiful moth, which expands about two inches and a half from tip to tip of the opened wings. The front wings are of a dark olive-green color, crossed by bands of greenish-gray. The hind wings are of a dull brick red.

These caterpillars are sometimes very destructive to the foliage of grape-vines, but are easily destroyed and can be controlled without difficulty by hand-picking.

Central Exper'l Farm, Ottawa.

JAS. FLETCHER.

THE GRAPE PHYLLOXERA (*PHYLLOXERA VASTATRIX*) PLANCHON.



HERE are few injurious insects so well-known by name as the notorious Phylloxera which has been the cause of such enormous losses to the grape growers of France, Italy, Spain and other countries in Europe. This pernicious insect is a native of America and has been introduced into the vineyards of Europe with American grape-vines. It has become thoroughly established there and now every year commits most serious depredations, such indeed as are unheard of on this side of the Atlantic. The life-history of this insect is very remarkable and was worked out with great skill by the late Prof. C. V. Riley who published a full account of it in his celebrated Missouri Reports. In Saunders' "Insects Injurious to Fruits," the main points of the life-history are given as well as in Weed's "Insects and Insecticides." There would be no useful end attained in giving the readers of the CANADIAN HORTICULTURIST all the details of this long and complicated history. Those wishing to study it can find it in the above named works. Suffice it to say that there are two forms of this insect

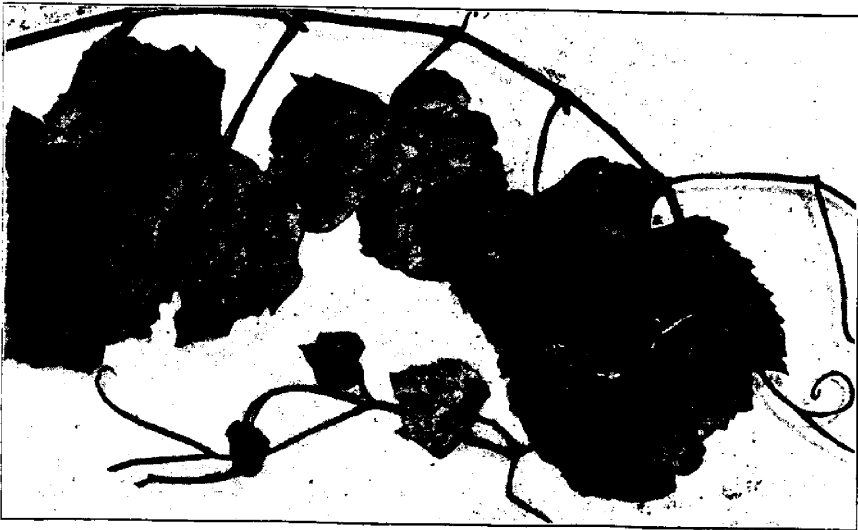


FIG.—995. BRIGHTON VINE COVERED WITH PHYLLOXERA LEAF GALLS.

with very different habits; the first produces greenish-red or yellow galls on the foliage as shown in the illustration; the other, which is the most injurious, attacks the roots, causing swelling on the young rootlets, which finally decay, and thus the root system of the vine is destroyed. The winter is passed in a dormant condition on the roots. When growth begins in the spring, the lice

revive, and increase rapidly in numbers. There are five or six generations of wingless females, all of which bear young without the intervention of males. About the middle of July some winged females are produced which leave the roots and fly to other vines, when each one lays a few eggs of two different sizes and then dies. In about a fortnight perfect males and females are produced from these eggs, the females from the larger eggs; they are born for no other purpose than the reproduction of their kind, and are without means of flight, of taking food or excreting. Each female lays one egg from which comes an egg-bearing wingless mother, thus beginning again a new cycle of existence. It has

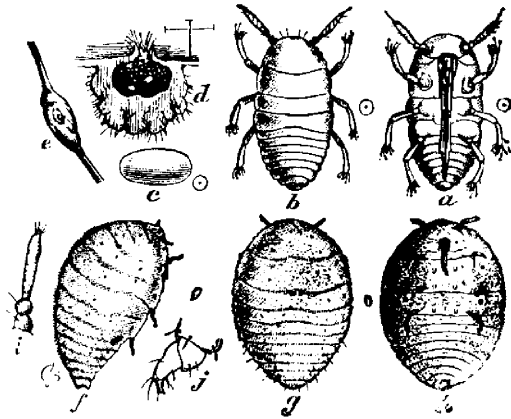


FIG. 996.—PHYLLOXERA.

been also discovered that the winged females are not actually necessary for the perpetuation of the species; for some of the wingless underground form lay a few eggs of two sizes from which males and females are produced. The use then of the winged females seems only to be to secure the distribution of the species; for these winged females which begin to appear in July continue to appear through the rest of the season and are most abundant

in August.

If to the above we now add that occasionally the underground form leaves the roots and produces galls on the leaves, we have a general outline of the whole life-history of this species. In Canada the injury from the Phylloxera is seldom serious. The form on the leaves is occasionally rather abundant in the Western part of Ontario; but the root-inhabiting form has been seldom complained of or even observed.

Some years ago Dr. Saunders saw a vineyard of Clinton vines severely attacked in the neighborhood of London, Ontario. The result was that most of these vines died, but such an attack as this in Canada is quite exceptional.

Remedies.—Numerous experiments have been tried in this country and all others which the Phylloxera has invaded, to find some means of fighting it successfully, but up to the present nothing quite satisfactory has been discovered. Flooding the vineyard has been adopted where practicable in Europe, and the use of bi-sulphide of carbon which is forced into the ground about the roots by means of a special instrument. In this country the only remedy which has been found necessary is the destruction of badly infested vines or the removal of gall-bearing leaves from those which are less seriously attacked.

JAS. FLETCHER.

Entomologist Central Exper'l Farm, Ottawa.

A RUSSIAN SALVIA.

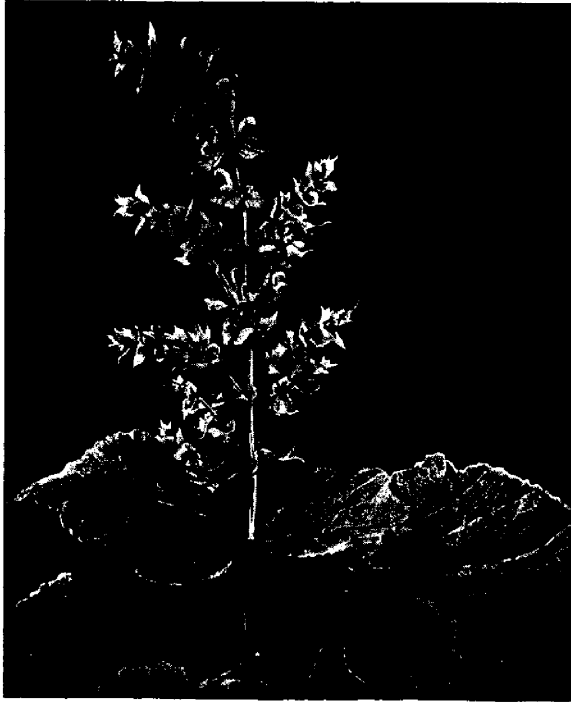


FIG. 997. —RUSSIAN SALVIA.

The illustration is from a photograph of a Russian Salvia, seeds of which were sent us in the spring of 1895 by Mr. Niemetz: The first year it did not flower, but this year, has grown most vigorously to a height of two or three feet with immense leaves, and spikes of white flowers. These latter were very showy against a background of Norway Spruce trees. Being easily grown from the seed, it is a flower within everybody's reach, and well adapted to the old-fashioned garden.

The Salvias are very numerous, about four hundred and fifty varieties having been described, two of them natives of Great Britain. Another, *S. officinalis*, is the well known sage, more in demand for its leaves, than for its fruit.

APPLE NEWS.

The Fruit Crop.

SIR,—The good report which I sent you for publication in the HORTICULTURIST some time ago will have to be modified a little. The apple tree twig blight which appeared to be noticed here for the first time last summer, has again visited us, and is doing great injury to the orchards in this district. It is first noticed at the extremity of the small twigs, though oftentimes it attacks limbs an inch or more in diameter, and that in the middle of the limb. The fruit immediately ceases growing, and the disease spreads both ways and will eventually kill the tree. The Ben Davis seems particularly subject to it, the writer having lost two fine trees, also one Wallbridge and one Duchess Oldenburg, and a Golden Russet. A neighbor of mine has also lost several Ben Davis.

It is well to sound a note of alarm about this disease. One of our members, Mr. D. Monroe, of Cedar Brae, Cornwall, has already sent samples of infected trees to Professor Craig, Ottawa, and that gentleman's answer has been published in our local papers. His instructions are, to immediately prune the affected limbs and burn them, taking care to disinfect the shears, saws, etc., used in the work.

I would also supplement this by scraping the loose bark off the lower part of the large limbs and trunks of *all* the trees, and wash with strong soap-suds, thus inducing a vigorous, healthy growth, which will help to ward off this, or any other disease fruit trees are subject to. The tent caterpillar is also making his annual visit. Cut off the infested limb, sprinkle a little coal oil on and burn it.

Cornwall, Ont., Aug. 6, 1896.

W. S. TURNER.

THE EUROPEAN APPLE CROP.

Messrs. Simon Shuttleworth & Co., of Liverpool, write :—

SIR,—Since our last advice of June 15th, we have had more specific crop information from our people in Europe, and have ourselves travelled over several thousand miles of the United States and Canada. Regarding Europe, we beg to summarise as follows :

England and Scotland will be short of apples, especially for winter use.

Ireland has a good crop, but cuts no figure. It is expected that all of these will be used up before the American and Canadian crop begin moving in any quantity.

Holland will not likely have over one-third of a crop.

Belgium and France.—We take these together, as the apple crop this year

is largely on what is called the Franco-Belgian frontier ; otherwise than here, France is light and Belgium under the normal.

Germany.—In the Hamburg district there is a very small yield, in central Germany a half crop, and in the south a little better.

Servia and other European States will have some apples, but they are too far away to cut any figure in the direction of competition against American and Canadian supplies.

The crop in Nova Scotia is enormous and of fine quality. The crop in Canada is also fine in quality and of more than ordinary proportions. The crop in New England is also good and of good quality. Michigan has a good crop of apples, and so have certain sections of Ohio, Illinois, Missouri and Kansas. We know nothing definitely of other western sections. Virginia and Kentucky are light, and New Jersey is not heavy in her regular bearing districts, but the state at large will have a lot of apples. The same may be said of Pennsylvania and Maryland. New York state promises one of the largest and best crops on record. This may be put down as authentic. The meaning of it all is this : The crop being generally good all along the Atlantic seaboard and in territory that has always exported and is familiar with the requirements of the English markets, we may look for a very large movement abroad. It will make speculation hazardous on account of the enormous supply ; but if the surplus is started early enough and in large enough quantity to establish an early moderate selling basis, it will mean to the United States and Canada a tremendous and steady demand that will absorb their excess at paying value to both grower and dealer.

We shall be in shape to move any additional share of business that may come to us this year, having opened houses at both Leith and Edinburgh, Scotland, and established an agency at Hamburg, Germany. For several seasons now our combined outfit has handled over one-third of the annual exports of apples to the United Kingdom, and we propose to lose no portion of it this year through lack of enterprise in developing new markets. We shall offer the usual facilities of cable return upon shipments, and can promise more and fuller advice than any of our good competitors, for the simple reason that our lines are more extended, our ability for sale and distribution of stock is larger, and our agents cover more territory and are generally better posted than other apple people in the business. Their services and ours are at your disposal, and we shall do our very best in your interest.

THE APPLE CROP OF WESTERN EUROPE.

I beg to submit, for your information, some particulars as to apple crops in western Europe, which may assist you in estimating our probable requirements from your side.

Portugal.—Every promise of a large and good crop. The first shipments have arrived, and are realizing prices equal to 15/ to 17/ per American barrel.

Holland and Germany.—Early kinds short in quantity; later sorts more abundant, but total yield probably not more than one-third of the average.

France and Belgium.—The reports to hand show that there will be a fair supply of early sorts; but of late kinds the crop will be deficient.

England.—The main substance of the majority of reports from our home districts consists principally of records of the weather, which has certainly been exceptional, and 1896 must inevitably be remembered as the "frostless" year. In the early spring, indications of abundant crops predominated generally throughout the country. But the hopes thus raised were shattered later on by long-continued drought, the injurious effect of which was intensified by a series of excessively cold nights during the early part of May. After this we had rains, but they proved extremely local, and did not favorably affect the crop generally.

The net result is to indicate that of early kinds our crop will be scarce and soon over. Of later sorts the yield will be much below the average, and altogether insufficient to affect our requirements from your side, and our London markets should be prepared to receive fruit from America and Canada at a much earlier date than for many years past. And I consider there will be a special opening for supplies from the Hudson River.

Covent Garden, London, Eng.

J. B. THOMAS.

APPLES.

Messrs. Woodall & Co., Liverpool, write: The past season, as shewn below, was comparatively unimportant, the total imports into Great Britain being 788,000 barrels, against 1,438,200 barrels in the previous season. The quality and condition (especially of Canadian) were generally good, and a much larger quantity could have been disposed of without affecting prices. A feature of the past season was the Albemarle Pippin, which made its appearance in large quantities, and, being of good size, clear skinned, and of excellent flavor, it at once usurped the position of the Newtown Pippin, which for some time past has been small and scabby. The quantity, however, was so large, that with the exception of one period, only moderate prices were obtainable; but they will undoubtedly take the first position on the market, and growers of Newtowns must endeavor to improve the fruit or be left in the background. The English crop last Autumn was the largest on record, and it was thought that American and Canadian fruit would not be wanted; but as soon as good sound varieties especially Baldwins—began to arrive, their superiority at once asserted itself; and throughout the whole season there was an active demand at a comparatively high range of prices—this being particularly the case when Canadian shipments came to hand, which again confirms our opinion that the English

apple crop interferes very little with the consumption of American and Canadian fruit.

The prospects for the coming season are very good, for not only is our own crop short, but the unprecedentedly hot weather has hurried all fruit forward, and by the time American and Canadian apples arrive, there will be little, if anything, to compete with them. The latest reports from the Continent point to a similar state of things prevailing there.

The total imports into Great Britain during the past season, from United States, Canada, and Nova Scotia, were as under :

Liverpool,	438,354	Barrels.
Other Ports,	349,646	"
Totals	<u>788,000</u>	"
Against same period 1894-95 ..	1,438,200	Barrels.
" " " 1893-94 ..	175,000	"
" " " 1892-93 ..	1,204,000	"

Reports of the British Apple Crop :

	Over average.	Average.	Under average.	
This year.....	75	152	165	Reports.
Against last year.....	160	161	50	"
" 1894.....	2	44	278	"

BEST SIX VARIETIES OF PEACHES.

Mr. W. W. Hillborn, our experimenter in peaches and strawberries at Leamington, Ont., has been interviewed by the representative of the R. N. Y.

In reply to questions about varieties, he said :—

"Of course, we are experimenting with all the varieties we can get hold of, to find out which is the most suitable for our climate and location. Our idea is to get varieties that will give us a continuous crop during the whole season, and there are a great many varieties that come in together. To get the best of each, we must plant all of them and then select. In that way we can get a continuous crop from the earliest to the latest. I like the Alexander for the first ripening; then Hale's Early, Early Michigan and Lemon. The yellow peaches come in about that time, and, of course, when the yellow ones come, we have no market for the white or clingstones. Early St. John is the first; then Early Comfort and Barnard's Early. An excellent one that we have had a few years in Canada, is the Fitzgerald, an improvement on the Early Parker. Then Elberta comes in soon after that, followed by Hill's Chili, Longhurst and late Crawford. The Lemon, I believe to be the best late peach we have. We also have the Smock and the Salway."

"What about the Crosby?"

"We have used the Crosby, but so far, I am not very favorably impressed with it."

"What objection do you find to it?"

"With young trees, it does not get large enough, and does not color up quite so nicely as some. We have planted it largely, however, and it may do better when the trees get larger."

"What three varieties would you recommend a beginner to plant?"

"We cannot cut it down to three varieties and cover the season."

"What would be the best one-half dozen varieties then?"

"Of course, much will depend on the location; but on general principles, in a peach-growing district, I think that the following list would be about as good as I could give off hand. I would cut out the white, or clingstones, entirely, in so small a list: Early St. John, Early Crawford, Elberta, Late Crawford, Lemon and Smock."

RUSSIAN PEARS.

The most highly recommended of the Russian pears of the Budd-Gibb importation is Bessemianka (seedless). At the meeting of the American Pomological Society, last fall, in Boston, all who had tested these pears agreed as to its entire hardiness, and placed Sapieganka next. Fortunately, this also is reported to be very good in quality. Both are of medium size, the trees good growers, and most are said to come early to bearing. I have some forty trees of these and other sorts from Russia and Poland. Not all are strictly iron-clad in our "test winters," in fact, Bessemianka seems to be the only one utterly untouched by 40° below zero. But Sapieganka is only slightly hurt, while several others are likely to succeed fairly well. Bessemianka is a free, upright grower; yearling trees set in the spring of 1885 being now from six to nine feet high. As Mr. Gibb had fruit on Bessemianka last year, and mine bloomed this season, it would seem that they are, as reported, early to come to bearing. Sapieganka is the reverse of Bessemianka in being a low, straggling grower, though vigorous. It is distinguished, also, by its red leaf-stalks. The leaves of most of these pears are thick and glossy, though less so than the Chinese pears. —Vick's Magazine for August.

✧ Flower Garden and Lawn. ✧

DIGGING AND CARING FOR GLADIOLUS BULBS.



YOU can begin to dig gladioli from September 20 to October 20, as soon as the foliage shows signs of ripening or browning, which is usually one month or two after flowering. Take a garden or potato fork, and run it down below the bulb, press down on the handle until the soil and bulbs are well loosened, taking care not to disturb the bulbs too much to loosen the bulblets. Then pull the bulbs out of the soft dirt by the stalks and lay them down one way on the ground in little heaps; if any very ripe and loose bulblets drop in this process you can see them and pick them up. When you have dug all the bulbs you wish to care for this day, take a common pair of pruning shears, or even a pair of large scissors, hold from three to six stalks in the left hand and the bulbs over a shallow box, and cut the stalks off about one inch from the bulb; spread the bulbs then on a floor, or in shallow boxes, or over close slats or sieve-like perforations, which is a little the best, in a dry airy place as long as you can with safety from freezing; if you can keep them in this way until Christmas, so much the better. By January you should pull off the bare plate or loose shell and old roots, which is easily done by pressing the thumb against them. When a man can clean from 10,000 to 20,000 bulbs in this way in a day you can see it is no great labor. After the roots are off collect all the little black bulblets in a box by themselves. If you have any considerable amount of them put dirt and everything into a sieve, then you can shake the dirt out and throw the roots out very quickly. Put the bulblets down cellar or in any other cool moderately dry place, and plant them as early as you can get in the ground in the spring. Now the large bulbs are separated from the bulblets you can put them in slat bottomed boxes, about 3 or 4 inches deep, down cellar in a dry cool place free from frost. In this way you can keep your bulbs as well all winter as the florist, and always have fine large flowers at little actual cost and labor.—Gardening.

VARIETIES OF CANNA INDICA.



THE new varieties of Canna are beautiful things in the flower-garden, but cultivators will not get the utmost out of them that they are capable of unless special preparations are made for them. Merely to dig the ground after manuring it is not enough. It should be remembered that the Canna is a native of the tropics, and can only be relied upon to flower well in the warmest of summers when some endeavors are made to imitate tropical conditions. The first of these is warmth of soil, and this can be obtained in a modified degree by putting, say, a bed of

1½ foot thick of fermenting materials, consisting of two-thirds last year's Oak or Beech leaves, and one-third short stable-litter, treading the mass fairly firmly together. This affords warmth and drainage, but failing the leaves and dung, their place may be taken with furnace-clinkers, brickbats, etc., to the depth of a foot, putting a layer of rotten dung, 6 inches thick, on the top of these. The spot chosen for the Cannas should be the hottest in the garden (at the foot of a south wall if cut blooms are looked for), and the plants should stand at least 2 to 3 feet asunder, according to strength, so that the sun may reach them all round, and the soil; mulching in our climate does harm, in preventing the sun-heat penetrating the soil, and its place should be taken by a bi-weekly stirring of the soil to aerate it, and prevent the loss of moisture, a crumbly surface doing this almost as effectually as a mulch. The rest is a matter of water and liquid-manure. The foliage should not be wetted at night, but about seven in the morning if the previous day was hot and it is likely to be so the next. If the bare appearance of the soil in the early stages of growth be not liked, put around the bed a row of *Aralia papyrifera* (Chinese Rice-paper plant), *A. Sieboldi*, *Farfugium grande*, a dwarf *Solanum*, or some of the taller varieties of tuberous *Begonias*—now, we fear, almost lost to gardens, but which are as graceful as a *Fuchsia*.—Garden Chronicle.

PREPARING PLANTS FOR WINDOWS.



THE preparing of plants for windows for winter is very apt to be overlooked at this season of abundance of flowers. It is because of this neglect that very much of the disappointment so many have arises. Those who do not care to prepare the plants or neglect to do so, usually depend on plants dug up from the garden when summer is over, or on what stray plants in pots happen to be available. It is much better to start at once to get established in pots a lot of nice plants in good assortment, such as are known to be good winter bloomers. Taking

the geranium as an illustration, the best results follow the taking of small plants which have been in pots all summer. Without exception, such plants are the best, whether they be geraniums or anything else suitable for winter. If such plants are not already in pots, dig up from your garden some medium sized ones, prune the tops back somewhat, to make them bushy and to lessen the risk of harm from transplanting, and then place them in pots a little larger than what will hold the roots comfortably. Do this soon. They should then be placed in a damp, shady place for a while, such as a shaded frame, free from much

wind, and be kept well watered. A shed or even a cellar will answer the purpose, as the shade and moisture are badly needed only for a day or two, that the plants may not suffer from too great evaporation. If taken up now and treated in this way, roots are soon made, the plants established, and new growth commenced before cool weather comes. Plants already in pots should be shifted into a size larger about the close of August, shaking from the roots as much of the old soil as possible. When this old soil is difficult to shake off, as sometimes happens, place the plants in a bucket of water for a little while, then it can all be washed away. A pot but a size larger or even the same pot is better than a larger one, as plants do not grow too large and flower better thereby. A good selection of winter plants may be made from the following list: Geraniums, abutilons, coleus, ageratum, fuchsias, linums, Impatiens sultani, Cypripedium insigne, calla, begonias, both the flowering and the foliage kinds, ferns, Oxalis cernua, Catalonian jasmine, Cystisus racemosus, carnations, primroses, streptosolon, heliotrope, Ruellia macrantha, pansies and lobelias. Common candytuft sown now gives plants which bloom all winter long.

I hardly know whether to recommend roses, or not, because all do not succeed with them. But I have seen the well-known Hermosa, Malmaison, Perle, Archduke, Charles and other everbloomers flowering in good shape in windows. There must be a temperature not lower than 55° at night, to have roses thrive. Cactuses are sometimes desired both for their odd appearance and their beautiful flowers. Among the best blooming are the epiphyllums, and perhaps truncatum is the most satisfactory species, its crimson flowers being produced freely. Being a not over strong grower, it is often grafted on stronger growing sorts.

Special mention must be made of the cyclamen. But few plants are as good for winter blooming. Perhaps persicum is the best species for the purpose. It is not a hard plant to grow, and then, besides its healthy foliage and pretty flowers, the blossoms are so lasting, an individual flower often remaining in good condition for six weeks.

Palms are now largely used for winter decoration, and one of the best for dwelling houses is the *Areca lutescens*. It is of graceful growth and does not object to dwelling rooms as some palms do.

Bulbs are indispensable for winter. September is soon enough to start them. Afterwards a few more should be started about every two weeks, that a succession may be provided for. Hyacinths, tulips and crocuses still find much favor for the purpose.

A few vines among the other plants and to train about the sides of the windows may be used to good advantage. The common English ivy, the *senecio scandens* and the moon flower are excellent for the purpose. They can be supported up the sides of the windows and festooned across the top, to form a green covered bower, and when in this shape their value is apparent. It is as

well to start with strong ivy plants, as they are somewhat slow of growth at times. Two plants of partly creeping habit are *Panicum variegatum* a plant of angular growth but of exceedingly pretty variegated foliage and the wandering jew, *Saxifraga sarmentosa*; the latter sends out runners as strawberries do, which hang over the pot, rooting when they touch soil.

Good soil is an important matter in the growing of plants. Florists prepare a heap of it a year beforehand, by taking the top spit of a meadow, cutting it in squares as is done for sodding purposes, and making a heap by placing a layer of sod and a layer of stable manure alternately. When rotted up this is excellent. In an emergency such sods may be cut from a meadow and be chopped up into quite small pieces, be mixed with one-fourth decayed manure and used at once.

To have success with flowers, it is most important that the plants enter the house entirely free from insects. Green fly, thrip, red spider, and mealy bug are their chief enemies. Examine them well from now on, syringing them well at times with force enough to dislodge any insects that may be on them, which can be done except in the case of the mealy bug. These get in the axils of the leaves and are destroyed by gardeners by using a tooth brush to dislodge them.

Provision should be made now for suitable stands for the plants. The window-sill is not the place for them. With saucers under the pots tables can be used. Zinc lined boxes are now much used. They are made long and narrow, to suit the ledge of the window, whatever the length may be. They can be made of a size to be set on a table and of any size desired. These boxes are not intended for plants to be planted in them, but only to hold the pots, so as to catch what water runs from the plants.

It seems out of season to refer to plants for winter now, but it is not. This is the time to begin to get the collection together, if we would have the pleasure beautiful plants bring us in the winter season.—JOSEPH MEEHAN in Country Gentlemen.

DRIED FLOWERS AS ORNAMENTS.



OR winter use as bouquets, immortelles, grasses, sedges, berries, etc., preserve a fresh appearance and enhance the beauty of the farmer's home. Now is the time for the farmer's wife to make the selections for drying and preservation. There is a class of plants called everlastings, immortelles, and the like, which from their strawy nature are particularly adapted to winter use, retaining their colors fully as well after drying as when growing. An old favorite of this class in times gone by was the Globe amaranth, with several colors. It was useful as a garden flower and excellent in the winter bouquet. Now it is almost a rarity.

Then there are several colors of acroclinums, very graceful in outline. The amobiums, aelichrysum or eternal flowers, the rhodanthes, xeranthemums or straw flowers, all were common garden plants a few years ago.

Drying these flowers consists simply in cutting at the proper time, which is when in full bloom, and before seeds have formed. Where practicable the whole plant may be cut or pulled and hung bottom up in a partially darkened room or shed. Usually, however, the flowers come out at different times and must be cut as ready, leaving on as much stem as possible. Tie in bunches and hang up. The immortelles imported in such quantities from France and Germany, originally yellow but now to be had in various colors, are charming herbaceous plants. Unfortunately they are not hardy with us. There are, however, several natives of the same genus, gnaphalium, in English cudweed or common everlasting, which may be preserved in a similar manner. There are also the purple cudweeds and the pearly everlastings, often found in dry, gravelly or sandy soils, which may be had for the gathering. All the work necessary is to hang up in the spare room until the whole collection is harvested or the material is wanted for making the winter bouquet.



FIG. 998—FLOWERS PRESERVED FOR WINTER USE.

As flowers in themselves will have a somewhat stiff appearance alone, dried grasses of various kinds will be found very useful. Hang bottom up to dry, as directed for flowers, for the reason that all plants when first cut wilt and are unable to hold their parts erect. They soon become rigid and when fully dried have had a quite natural appearance.

If flowers are allowed to even partially ripen seed, they will fall to pieces when taken into a warm room. Among the best grasses are foxtail, cat-tails, bents, feather grass and numerous march grasses and sedges. The many brizas or quaking grasses are all well known. Even wheat, rye and oats, if collected early enough, are quite desirable, as are also a number of summer grasses —Farm and Home.



The Canadian Horticulturist

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 are at our risk. Receipts will be acknowledged upon the address label.

↯ Notes and Comments. ↰

A BLUE PLUM, about the size of Lombard, but of much better quality, comes from Mr. A. M. Smith. This would appear to have value on account of its earliness, ripening about July 15th this season.

SAMPLES OF THE FINEST EARLY WISON BLACKBERRIES we have seen were brought into this office on the 10th Aug., 1896, by Mr. Charles Gethim, fruit grower, Grimsby. Many of the berries measured $1\frac{1}{4}$ inches in length, and an inch in width, and on the one branch we counted thirty berries. The variety is, however, a little tender for our climate.

BRANDYGAGE AND OULLIN'S GOLDEN GAGE PLUMS came to hand August 1st, from Mr. David Blackadder, Windsor, who has the stock of the late James Dougall. The first is a rather small, but very productive yellow variety, with Mr. Blackadder, and suitable for canning; while the latter is a fine yellow dessert plum of large size, and excellent quality.

PRUNING BACK RASPBERRY CANES.—In all our large market plantations of Cuthbert raspberries, it has become a custom to severely cut back the young wood in the growing season. This is certainly a great convenience in cultivating, as well as in gathering the fruit; but the question is an open one whether more fruit would not be gathered by leaving the canes to grow uncut during the summer, and in spring cutting off merely the weak ends. There is no doubt that the strong buds all the way up the cane will produce fruit, and a large part of this is cut away by the usual custom of shortening in.

PRESERVATIVE FLUIDS.—Mr. E. M. Burch, Spokane Falls, Wash., writes, he has been experimenting with fruit preservatives, and has found that first class olive oil will keep all kinds of delicate fruits in perfect condition indefinitely. Also that purified glycerine will keep light colored berries and cherries in perfect condition.

SAUNDERS' PLUM.—A package of samples of this variety came to hand on the 5th August, just in prime condition for eating. They were grown by Mr. E. Morris, of the Fonthill Nurseries. It is a fine-looking yellow plum, of fair size, and good quality, ripening before the market is filled with other varieties, and it should therefore command a good price.

UNITED STATES APPLE MARKETS may be the best for Canadian apples some seasons, but this year we think Mr. Glen's hopeful views would be doomed to disappointment owing to the immense crop in New York State. We are pleased to hear from a Canadian residing in New York, and to know his views on this important subject—of the best market for Canadian apples. Another season we hope to test his encouraging statements, by placing some of the choicest of Ontario's apples in the hand of some reliable New York commission house; but this year we expect to see every market in North America full of apples, and export our only hope for making sales of our crop.

AMMONIA AS A TREE WASH.—Anyone who takes a careless "sniff" at the hartshorn bottle can readily understand how even a moderate dose of ammonia will produce fatal results when designedly administered. But in these very qualities (says Colman's Rural World) is to be found the great value of ammonia in keeping orchard trees clean and vigorous. What insect can possibly live to do damage to trees after having received even a homœopathic dose of ammonia? Trees given a good ammonia wash once or twice a year will show in their clean, shining bark and glossy leaves a high appreciation of such attention, and many orchardists who have used these preparations bear testimony to their substantial value in increasing the vigor of the trees and the size and quality of the crop. It is comparatively cheap, and its timely application to almost any orchard will be found to pay handsome dividends.



✦ Question Drawer. ✦

Marketing Grapes.

863. SIR,—Please let me know in this journal the best way to gather and sell grapes?
J. G., Cayuga, Ont.

Grapes, like other fruits, need to be carefully handled to bring the best prices. The vines need to be gone over frequently during the ripening season, gathering only those with full color, because grapes do not, like other fruits, color after being gathered. The bunches should be cut off with a pair of scissors, and so handled as not to disturb the bloom. Ordinary varieties may be at once packed from the vines into the basket that is intended for sale. Choice varieties should be gathered in shallow trays or baskets, in which they should stand a day or two on shelves in the fruit house, and then re-packed. By this treatment the stems will wilt and the bunches will then keep without moulding, and pack more closely than when green.

A desirable grape package for fancy fruit is one which can be packed from the bottom against the cover; but in the absence of such a package the ordinary basket, such as is sold by all our basket factories, answers an excellent purpose. For ordinary stock or for wine grapes the 15 or 20 lb. basket answers well, but for choice grapes, especially the Rogers, which are intended for dessert purposes, the eight or ten pound basket is best. A fine cover, with an opening over which purple leno is stitched, is now made for these baskets, and for cheapness and simplicity cannot be excelled.

The price of grapes, as well as that of other fruits, is much lower than formerly. If the grower can realise one cent and a half a pound net he is doing very well now-a-days, and indeed with such productive varieties as the Concord this price will pay him very well.

Unless the grower has some regular customer, he must of course be content to consign his fruit to some reliable commission house, such as those advertising in this journal, and be content to accept returns made by the salesman, which must not be expected to be always satisfactory.

Tulips from Seed.

864. SIR,—How do you raise tulips from seed, and when should it be sown? Can new varieties be produced in this way?

A SUBSCRIBER, *Hamilton.*

Reply by H. L. Hutt, Horticulturist, Ontario Agricultural College, Guelph.

It is the same with tulips as with all other plants; new varieties are produced only from seed. The production of new varieties is very interesting, but it requires patience. Seedling tulips have to be grown from five to seven years

before they become large enough to bloom, and then the grower is fortunate if one in a hundred is worthy of propagation. The seed should be gathered from the best flowers and sown as soon as ripe, in a light loamy soil, where it can be protected from too hard freezing. The first year bulbs about the size of peas will be produced; these must be grown on the same as the flowering bulbs; taking them up when ripe and replanting in autumn.

Raspberry Canes Affected.

865. SIR,—What is the cause of Cuthbert leaves curling, and fruit drying before maturity on some of my Cuthbert bushes?

J. M. O., *Komoka.*

Possibly they are affected with the raspberry anthracnose, a fungus disease of the stalk, which appears first in the form of small reddish-purple spots scattered over the surface near the ground; or the injury may be due to a borer in the root or in the cane.

Columbian Raspberry.

866. SIR,—Have you fruited the Columbian raspberry, and what are its merits?

J. M. O., *Komoka.*

We have fruited this raspberry at our Burlington Fruit Experiment Station, during the present season. The writer visited the plantation there on the 15th of July, and found Shaffer and Columbian fruiting side by side. The chief note made was that Columbian was the most heavily laden with fruit; otherwise they were very similar.

Pruning the Climbing Rose.

867. SIR,—Give the proper method of pruning climbing roses. Should the wood be cut back every year as recommended for bush roses? How old should the wood be to bloom well?

J. M. O., *Komoka, Ont.*

Climbing roses are not cut back in the same way as bush roses. When first planted, they should be cut back to two or three buds; thereafter little pruning is needed except bent out weak branches, or canes, sickly and dead wood, and to direct the growth in a symmetrical fashion. Usually the climbing rose improves each year in blooming qualities. A Baltimore Belle at Maplehurst, thirty years planted, is covered with bloom every season, just after the bush roses are over.

Best Red Winter Apples.

868. SIR,—Please tell me which you think the best red skinned, hardy winter apples, varieties which are hardy and bear early and abundantly. I have plenty of Ben Davis, Baldwin and Pewaukee now. I want the very best for sale and export; soil clay, near Lake Simcoe.

T. F. CHAPIN, *Liste, Ont.*

The perfect apple is not yet introduced, that will meet all requirements. The Blenheim Orange is a magnificent early winter apple for the middle of our Province; at Peterboro' Mr. Edwards counts it one of his finest varieties for export. The Ontario is winning favor everywhere as a winter export apple, being of excellent quality and fine appearance. The Wealthy is a beautifully striped, early winter apple, the quality of which somewhat resembles the Snow apple, but of larger size. It is highly valued because of its hardiness. The York Imperial is a claimant for the first place as a winter export apple.

Plants for Name.

869. SIR,—I send you two cuttings which I found growing on sheltered places here. The one with the stone fruits grows on a shrub-like tree, ten or twelve feet high. The other is a slender growing vine with bright scarlet berries when ripe?

WM. HARRIS, *Rockwood, Ont.*

Reply by Prof. J. H. Panton, O. A. C., Guelph.

Of the plants sent for identification, the one with red berries is bitter-sweet (*Solanum dulcamara*. Order Solanaceæ). The other is Alternate-leaved Cornel (*Cornus alternifolia*. Order, Cornaceæ.)

An Insect Affecting the Wisteria.

870. SIR,—I mail you two specimens of a long yellow worm in its nest in the leaves of a Wisteria vine. Quite a number of them appear each year. Can you tell me the name, history and remedy.

A. S. SMITH, *Ravenswood, Ont.*

Reply by Prof. Jas. Fletcher, Exper. Farm, Ottawa.

The two yellow caterpillars found by Mr. Smith on his Wisteria vines are those of the handsome silver-spotted skipper butterfly, *Eudamus Tityrus*. This is a very large species for the family to which it belongs, spreading about two inches from tip to tip of the wings. It is a dark chocolate brown with a row of large satiny, old-gold spots on the upper surface and a large silvery white spot on the lower side of the hind wings. It is found in nearly the whole of the United States and Eastern Canada as far west as Manitoba. The curious, formidable-looking caterpillar which you send makes a nest within which it remains concealed, by fastening together with silk the leaves of various plants belonging to the pea family, such as the Wisteria, upon which Mr. Smith found it. It is also common on the locust—*Robinia*—and I have sometimes found it on various kinds of beans. The perfect insect is a beautiful butterfly and a very vigorous flyer. This caterpillar, although occasionally abundant, can be easily destroyed by hand picking when with a very little practice the tent-like nests can be detected and plucked off.

Strawberries from Seed.

871. SIR,—Is there any special way of growing strawberry plants from seed? I have got seed of the "Alpine" varieties, from Sutton, of Reading, Eng., two years in succession, and have not been able yet to get one plant to grow. I have succeeded in growing everything I tried, from teaberries up. I thought perhaps the seed I got last year was old, but was assured this spring the seed was fresh, and ought to grow; but up to date have nothing to look at but the ground I put it in. Also, what is the name of the *very latest profitable* strawberry to grow, and the largest raspberry?

J. A. G. CAMPBELL.

Reply by Mr. E. B. Stevenson, of Freeman.

(1) There is no special way to grow plants from strawberry seed. I have never had any trouble with fresh seed. I have grown it in pots in the house in winter, also in shallow boxes, and also in the open ground. It is slow to germinate, taking from four to six weeks before it begins to appear, I should say your seed had lost its vitality. I have now a fine lot of plants from seed sowed from last year's fruit. (2) I would name as the *very latest profitable* strawberry, the "Clyde."

NEW OR LITTLE KNOWN FRUITS.

Whaley's Favorite Peach.

SIR,—I send enclosed in this box a sample of my seedling peaches; they should have been picked forepart of this week; so, being so ripe, they may not show up nicely when you receive them. They are fully two weeks ahead of the Crawfords. I think that they are just what the peach growers have been looking for, however, will leave that to your judgment. If you think that they are worthy of recommendation, would be pleased if you would publish their good qualities, they are named Whaley's Favorite.

MARK WHALEY, *Olinda, Essex Co.*

The above letter was dated August 7th, and the peaches were opened August 9th, when all but one was decayed. We certainly are looking for an early yellow-fleshed free-stone peach, that can compete in our markets with the Elberta and Crawford from the South, which flood our markets in competition with our River's, Waterloo's and Hales'. The latter are clings of the worst order and are not wanted for preserving. The samples sent us by Mr Royce are yellow in flesh, a good color, and fair size, not quite free-stone, but can scarcely be called cling, so that they are well worthy of careful testing.

THE WATERLOO HORTICULTURAL SOCIETY has a membership of 125, all members of our Association. Mr. Beall will report concerning it in our next number.

THE FLOWER SHOW of the Grimsby Horticultural Society was appointed for Tuesday evening, September 1st. The first part of the evening will be a *conversazione*, and a very popular occasion, with the flowers as a centre of attraction. The last hour will be improved by a programme of instrumental and vocal music, recitations and addresses.

* Open Letters. *

The Mexican Strawberry.

SIR.—We are now cultivating about 300 kinds of strawberries, and out of a large collection we give the preference to the Mexican Strawberry, as the greatest yielder that we have ever tested; also, it is our largest berry, being considerably larger than the Marshall. In flavor, it is first class, but not to several other sorts. The plants attain a height of from 14 to 18 inches, with large, beautiful, dark green leaves; the blossom is large and perfect flowering. A strange peculiarity of this plant, is, that it yields heavier and better crops at three and four years of age, than it does at two years.

A single plant of the Mexican Strawberry will yield three boxes of fruit, when it is three years of age. In September and October here, we always get a big second crop from the Mexican Strawberry. The young plants when set out, always give a good picking the first season.

S. L. WATKINS, *Grizzly Flats, Cal.*

Irrigation—(See 860.)

SIR,—I think Mr. Pickett will find it profitable to send for an Irrigation Report which has been issued by the New Hampshire College, Agricultural Experimental Station, Durham, New Hampshire, U. S. A.

This Institution has devoted a considerable space to Irrigation, and if Mr. Pickett will send to the College for their latest and fullest report on the Irrigation subject, he will find it a great advantage, and it will contain all the information he should require for his purpose.

ANTON SIMMERS, *Toronto.*

That Big Tomato.

SIR,—I read with interest your article in August No. of the HORTICULTURIST headed "A Huge Tomato." I may say that for many years I have cultivated tomatoes successfully, and produced them in great perfection. In 1895 I had a number of specimens weighing from 1½ lbs. to 2 lbs. and one "huge" one which tipped the scales at 3 lbs. 3½ ounces. They were of the variety known as Mikado, improved by careful selection of seed from the largest, smoothest and earliest fruit. This year a hailstorm, about three weeks ago, utterly destroyed my garden. Thousands of panes of glass were broken in our town. We are taking steps to form a Horticultural Association for this place.

J. S. McCALLUM, M.D., *Smith's Falls.*

Native Red Plum.

DEAR SIR,—I send you a sample of the plum which Professor Craig reported on sometime since. It is a native, nothing seems to affect it—it is ironclad.

W. H. SNELLING, *Ottawa.*

[The plum is of good size, bright red, and very attractive. Too much bruised to test quality.]

Our Book Table.

CIRCULAR.—Grimm Manufacturing Co., Champion Fruit Evaporator and Dryer, for the evaporation of all kinds of fruits and vegetables.

Address, 84 Wellington Street, Montreal, Que.