

Photo by Miss Brodie

FIG. 2091. REQUA.

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* * JULY * *

THE REQUA GRAPE (ROGERS No. 28).

 FINE table grape, supposed to be too late for Canada, but ripening well in Niagara district. A sample of the kind of grape which should be grown for export, but the vine is scarcely productive enough to be profitable.

ORIGIN: E. S. Rogers, Salem, Mass., a hybrid between the Wild Labrusca, or Mammoth Fox grape, of Massachusetts, and a European variety. Mr. Rogers produced his seedlings in 1856, and at first introduced them only by their numbers.

VINE: fairly vigorous and moderately productive.

BUNCH: large, shouldered, moderately compact, but sometimes poor.

BERRY: large, round; skin, thin, wine color with thick bluish bloom. Pulp, tender, juicy; flavor, sweet, sprightly; seeds, two or three, of medium size.


QUALITY: dessert, very good.

VALUE: 1st class for home or foreign market.

SEASON: Sept., Oct. and Nov.

GRAPE GROWING.

EXPORT.

 HE grape growers of Ontario will be pleased to learn that arrangements have been made by the Hon. Sidney Fisher for a continuation of the experiments in the export of our grapes. Our fields are so wide in proportion to our markets that we can easily produce far more grapes than we can sell in our own country, but, if we can succeed in creating a demand for them in Great Britain, there would be no

limit to the market. Much has already been accomplished in the way of overcoming the prejudice against this fruit, but much remains, and we are glad that the work is to be pushed vigorously. About 100,000 lbs. of grapes, chiefly Rogers, are to be forwarded next autumn, and this should be sufficient to open the way for a constant trade; and even if the prices are not in advance of those usually received at home, this extension of our markets will open up

the most ready sale for ordinary varieties at home.

The favorite varieties of Rogers' seedlings, so far, have been Wilder, Lindley, Agawam, Salem and Barry. There are others that are excellent, as Massisoit, Merrimac, Requa and Herbert; and where they succeed and are sufficiently productive, these would all be good export varieties.

GIRDLING.

Some of our gardeners, who grow the Wilder, make a practice of girdling the vine for enlarging the size and hastening the ripening period. The success of their efforts has caused much jealousy at fairs over the exhibits, many claiming that such grapes ought not to compete with those not girdled or ringed. In our opinion it is a method of treatment open to any one who pleases, and in no sense only practicable by professionals, and therefore need not disqualify an exhibit any more than using a special fertilizer. If the judge finds a bunch of grapes on exhibition of which the flavor is inferior because ringed, let him count it down; or if it is abnormal in size, and so less desirable for the table, let it lose in the marking. We see no reason for a judge to question how the grapes were grown, so long as the samples are satisfactory and come under the proper class.

Prof. S. P. Maynard, of the Mass. Agricultural College, is an advocate of girdling, and we give his views as they appeared. Popular Gardening: "I have practiced girdling more or less for many years to test its

value in a scientific and economical way. The numerous experiments made in the college vineyard lead to the following results:

1. No injury to the vines girdled has ever been detected, even where the girdle was made on the main trunk near the ground.

2. The time of ripening is generally hastened by one or two weeks.

3. Careful sugar tests show no injury to the quality of the fruit.

4. The fruit was larger, more beautiful and sold for from three to five cents per basket more than that from ungirdled vines.

5. The best time to perform the work has been found to be early in July.

6. For reasons of economy of the forces of the vine, only a part of the cane of each vine should be girdled and only those that are to be cut away.

7. Annual arms should be grown for the purpose of girdling to bear the fruit, and a few unbearing ones for spurs to produce the canes for next year's girdling.

8. The best results were obtained when the ring of bark taken out was from one-eighth to one-quarter of an inch wide, according to the size of the cane girdled.

9. Good results were obtained when wires were twisted about the canes, but only when twisted very hard with pincers. For this purpose about No. 20 annealed wire was used and the work done late in June.

10. From our experience we believe that girdling will result in profit to the vineyardist, and in much pleasure to those who are growing choice late varieties.

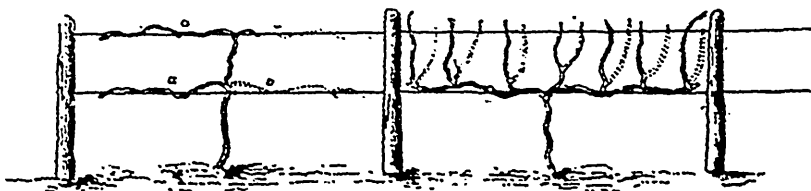


FIG. 2092. PROF. MAYNARD'S PLAN OF TRAINING THE VINE FOR GIRDLING.

In our practice we have worked out a method of girdling that may be applied to any system, but is most satisfactory where one cane is allowed to grow ungirdled on one side of the vine, but not permitted to grow fruit, while the cane of the previous year has been girdled and is producing fruit.

In our illustration *a* represents the cane that is to bear the fruit, while *b* is the spur made by cutting the girdled cane off. The girdle should be made three or four (3 or 4) buds from the main cane or arm so as to insure enough good buds for a good cane. After fruiting the girdled cane is cut back to a spur, and the opposite cane is allowed to bear. By this system there can be no possible fear of injury to the vine.

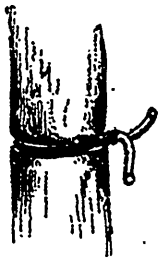


FIG. 2093.
GIRDLING WITH
WIRE.

The wire must be twisted so as to almost cut into the wood, and if the vine is growing slowly, no very marked results will follow, but if they are growing very fast, or if the wire is given about all the twist it will bear without breaking, it will be found almost as effectual as the knife.

We had a knife made from one solid piece of steel, but it was not properly made, and did not do as good work as one made in the same form of thin steel might. I think if two pieces of thin knife steel were riveted to the cleaner point it would do very satisfactory work. The two blades should be set about 3-16 of an inch apart.

Some one has suggested a knife and cleaner made like pruning shears, with blades side by side, and cleaner to follow the cut. Here is a chance for some inventive genius.

BRACING GRAPE TRELLIS.

A very simple plan of bracing the end posts of the trellises in our vineyards is by a wire attached to a stone sunk into the ground. We have practiced it for some years and find it most convenient and satisfactory. Miller, of Ohio, describes the method thus: "The letters *a, a, a*, show the wires fastened to the end post *b*, which is inclined outward from the row. Near the top of this post is also fastened a piece of medium weight galvanized wire *c* of a sufficient length to reach below the surface of the soil beyond the reach of frost; the buried end is fastened to a good sized stone, that will keep the inclined post and also the wires in their proper position. The ground about the stone and wire should be well firmed."

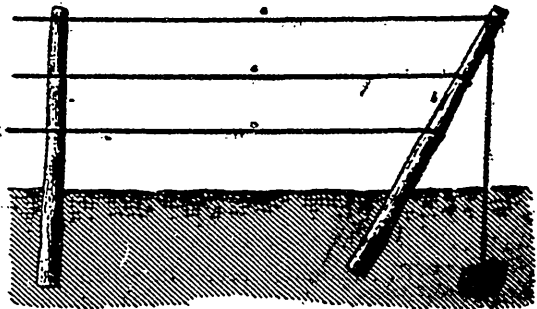


FIG. 2094. VINEYARD TRELLIS BRACING.

CO-OPERATIVE COLD STORAGE.—A writer in American Agriculturist wonders that farmers do not unite and take the advantage of cold storage for their apples. They sell at 75c. to \$1.00 a barrel apples which would bring in late spring \$3.00 a barrel; and

thus allow the speculator to make greater profit than the grower. A private cold storage plant might be too expensive for the ordinary fruit grower, but if several would combine the thing would be practicable and most remunerative.

A NOTABLE AMATEUR GARDENER.

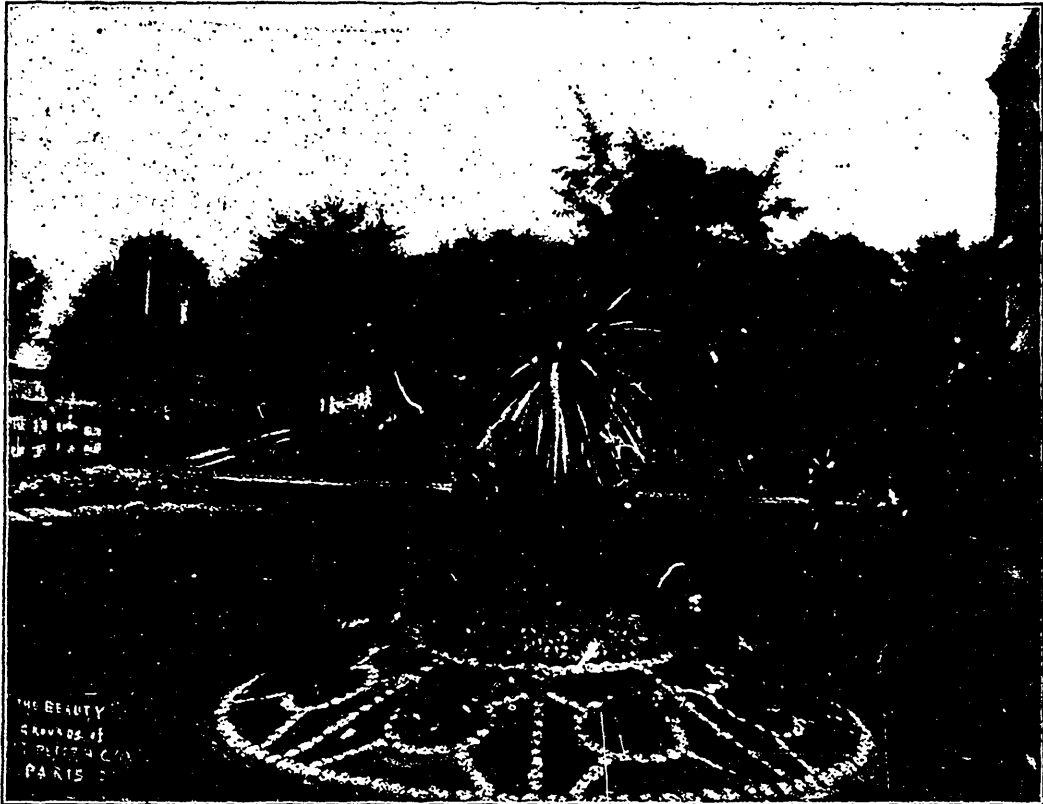



FIG. 2095. RIBBON GARDENING WITH CANNAS AND YUCCA.

 R. Alexander McNeill, when lecturing before the Paris Horticultural Society, met our friend Captain Peter Cox, and reported to us his marked success in fancy gardening. He also forwarded us a set of photos of his grounds, some of which we reproduce for the benefit of our readers. Mr. Cox has a lawn a little over an acre in extent, which slopes to the east, and on it are artistically arranged horse-shoes, circles, diamonds and long borderings, the effect of which is of a most pleasing character. These designs are made on paper, by the Captain himself and

handed over to his gardener to carry out the details. Having made a special study of his work the Captain's services are most valuable in lecturing before Horticultural Societies on ornamental gardening, or assisting village improvement societies on special lines of their work.

The president of the society at Preston has received from Mr. Cox three hundred plants to be distributed among the pupils for cultivation at home, who are to receive prizes for the best grown specimens at the end of the season; he also proposes to give a silver medal for the best collection of



FIG. 2096. THE LUCKY SPOT, WITH HORSE SHOE RIBBON BED.

plants raised by any school boy or girl, at an exhibition to be held for this purpose in the fall.

Every year Mr. Cox sets out from 15,000 to 20,000 plants from pots which consist of alternanthera (five varieties, orange, pink, green, bronzy red, light red), echeveria, sedum, several varieties of coleus, ageratum, alyssum, lobelia, petunia, sweet peas.

The grounds are also decorated with cannas and dracenas in tubs, of which latter there are a couple of dozen varieties, and which always look graceful. These have been kept growing for years, having been bought when very small, and placed within reach of any one who is fond of their care.

The situation is elegant, overlooking the town and the Grand River, so that an enthusiast may sit here for hours feasting his eyes upon flowers about him, and the beautiful landscape.

Mr. Cox commends the coleus most highly for bedding out; it may be so easily grown from seed in a cigar box placed in a sunny window in March, with a small pane of glass covering it. As the days go by and the little seedlings come to the surface, they are continually changing color, and one finds great delight in watching them develop, wondering what colors each day will bring forth. The coleus too is showy at a distance, even the horsemen galloping by

Mr. Cox's place will exclaim, "Hello, there's a nice place."

"In the long border," says Mr. Cox, "next the long hedge, beginning inside, I planted verchifeddi and golden coleus, blue lobelia, dwarf alyssum, golden green alternanthera, and as edging, echeveria. This border is the finest blend I know, and I have often been told I ought to have a patent on

it. Having made horticulture a study all my life, I am always ready and pleased to help any one with advice, or to give away cuttings and plants."

Such men as Peter Cox deserve encouragement, for they are most valuable citizens, contributing to civic improvement both by example and precept.

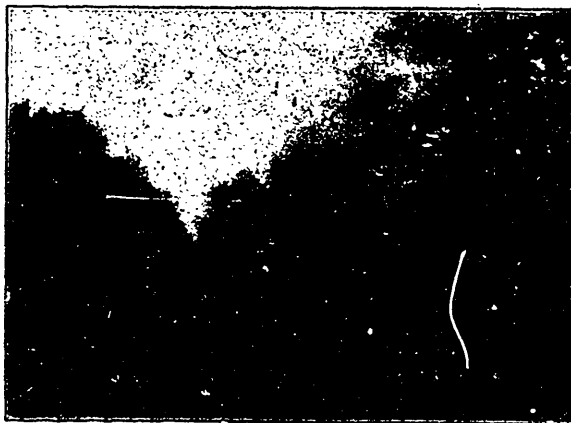


FIG. 2097. THE ENTRANCE TO CAPT. PETER COX'S GROUNDS.

LANDSCAPE ADVERTISING is the subject of a fine paper by F. L. Olmstead, landscape architect of Boston, read before the American Park and Outdoor Association, denouncing that sort of public advertising which defaces the otherwise beautiful landscape. He advises that the association in conjunction with municipal organizations endeavor to secure the adoption by park commissions of carefully drawn regulations governing in a clearly reasonable and moderate manner the display of advertising signs upon property fronting on the parks and open spaces under its control.

Perhaps our local Horticultural Societies could help in the work by discouraging the common practice of painting on rocks and barns in huge letters tobacco and medical

advertisements which are an eyesore to every man of correct taste. Possibly they could adopt the plan of the Twentieth Century Club of Boston which sent out to property owners cards for signature bearing the following statement:

"I hereby agree to permit no advertisement on my property, other than plain and inoffensive ones necessary to my tenants' business or my own. I will endeavor by every means to prevent the disfigurement of the landscape and highways:

"Town of _____ State of _____

"Instructions: When the names of eight persons have been signed to this promise, place a one-cent stamp on the other side and mail it."

PAN-AMERICAN HORTICULTURE—II.



FIG. 2098.

OUR CANADIAN FRUIT COURT.—In our previous letter we gave a brief description of court in the Horticultural building, and since that time we made another visit and secured a couple of snaps which will give our readers some idea of the installation and of the exhibit. Fig. 2098 shows us a glimpse of the arches described on page 217, which were indeed excellent and appropriate, in design and execution. Mr. Collins, Mr. Bunting's assistant, and the young lady stenographer are also seen with the exhibit, and in the interior the trophy, with an exhibit of domestic canned fruit quite creditable to Canadian house wives. Unfortunately no preparation was made in 1960 for an exhibit of bottled fruit. Mr. Bunting intends having a good collection of currants, gooseberries, cherries and other early perishable fruits put up in acids for exhibition after their season is over.

Fig. 2099 shows the court from another side, with one of the tables of cold storage apples set forth. These apples form the chief part of the exhibit for the months of May and June, and even in July and August while fresh fruits are still scarce, excepting small fruits, these apples, the crop of 1901,

must necessarily be a prominent feature in the exhibit. Fortunately these are coming out of cold storage in excellent condition, even Holland Pippin and Blenheim Orange. Some of them have been on the tables since the 18th of May, over a month, and are still looking well, not over 50 per cent. of them requiring removal through decay; a good proof of the fallacy of common notion that fruit will not stand up well after being in cold storage. We are pleased to see the testimony of American papers to the excellence of this exhibit, and to find that even Americans are admitting that the Ontario exhibit ranks second to none in the Horticultural building. For example the New York Fruit Trade Journal, under date of June 8th, writes:—

“There are some excellent specimens of Canadian apples, some Spys being perhaps a little better than anything in the New York State exhibit. The exhibit from Illinois is pronounced inferior to the New York standard. Catawba grapes are keeping remarkably well. None of them have been removed yet on account of decay. Black grapes are about done.”

A correspondent writes from Buffalo on the 20th June:—“Ontario's exhibit is attracting a good deal of attention on account of the fine quality of fruit placed upon the tables. Expressions of wonder and admiration are heard on every side that it is possible to display fruit of such fine quality.”

The Jersey Advocate and Dairyman of New York City says:

“Canada contributes a most interesting and instructive exhibit from Ontario.”

It is to be hoped that Americans who see this exhibit will carry away with them a more correct idea of the land of the maple leaf and beaver than most of us now possess. The average American deludes himself with the idea that Canada is a land of snow, forests, rocks and rapids, with no particular products except pale ale, toboggans and canoes.



FIG. 2099.

Let them go to the Ontario exhibit at the Pan-American and be undeceived. Here they will find luscious strawberries, and wine made from the delicious grapes grown in St. Catharines. In the season, from this one station alone (St. Catharines) are shipped daily from ten to thirteen carloads of grapes and peaches. Apples of thirty varieties, Northern Spy, King, Spitzenburg and Yellow Cranberry included, are shown in profusion; while the exhibit of canned fruit and berries, "done up" by the Canadian farmers' wives, from their own cultivation, is an enlightenment as to Canadian production.

Great bunches of crimson clover ornament the stands, and this growth is an object of much curiosity to the city-bred visitor. As one of the very obliging gentlemen in charge of the exhibit very kindly explained to me, it is used as a "cover crop" in the orchards and vineyards in the fall, and in the spring is plowed under as a fertilizer. The section of the Horticultural Building in which stands the Ontario exhibit is artistically draped with ropes of the maple leaf—Canada's emblem.

If the attention it deserves is given to this exhibit there will be less excuse for mistaken ideas with regard to "Our Lady of the Snows."

And this is creditable to Ontario when you consider the thousands of dollars spent by New York State in collecting, while our own exhibit was not prepared until the very end of the apple season, and was accomplished at comparatively little cost.

On Thursday, the 27th ult., we visited the Horticultural Building again and of course took notes of many exhibits besides our own. Illinois and Missouri show some magnificent Ben Davis, Willow Twig and Gano apples. We must admit that we cannot grow Ben Davis equal to some of the States where the

conditions exactly favor that special variety, but, aside from these special varieties, they have nothing on exhibition superior to our Ontario apples. New York state has a larger quantity of apples, but the many inferior varieties shown much depreciate the sum total of the exhibit. Just now a very fine collection of over one hundred varieties of gooseberries is on exhibition from Geneva, but they are too green yet to count much for the student of pomology. A magnificent exhibit of Marshall strawberries was also shown in this exhibit.

The first strawberry exhibit in the Horticultural Building was made by Ontario on the 20th of June, since which time numerous exhibits of strawberries have arrived. So far the following is the list of Ontario strawberry exhibitors:—

- Jas. A. Patterson, St. Catharines, Ont.
- Thomas Beattie, St. Catharines, Ont.
- Alfred Griffis, St. Catharines, Ont.
- T. W. Freeman, St. Catharines, Ont.
- C. M. Honsberger, Jordan Station Ont.
- James Titterington, St. Catharines, Ont.
- A. M. Smith, St. Catharines, Ont.
- Albert Pay, St. Catharines, Ont.
- A. Railton, Fonthill, Ont.
- Luther Dunn (florist for Mr. Riordan), St. Catharines, Ont.
- George Law, Niagara Falls South, Ont.
- G. C. Biggar, Niagara Falls South, Ont.
- S. D. Ferminger, St. Catharines, Ont.
- S. M. Culp, Beamsville, Ont.
- Vanduzer & Griffith, Grimsby, Ont.
- J. E. Bromley, St. Catharines, Ont.
- A. A. Leslie, Aylmer, Ont.
- Gordon Bunting, St. Catharines, Ont.
- Robert Thompson, St. Catharines, Ont.
- Mr. Luther Dunn of St. Catharines also shows a large number of varieties in pots, which are very handsome.

Large as the Horticultural building is, it will not contain all of the horticultural exhibits, and many semi-tropical ferns, palms, and various other species of trees, vines,



FIG. 2100.

shrubs and flowering plants are planted in different localities about the building.

Absence of straight lines in laying out the walks, with an apparent natural carelessness in connection with the whole plan, together with the blending of color with the quiet green grass plots, conspire together to render the surroundings of the Horticultural building one of quiet beautiful significance. The area called the Music Garden contains about two hundred beds, aggregating over three hundred thousand square feet, comprising many different sizes and containing a great variety of flowering plants, which will be extremely gay with color during the Exposition.

One hundred and fifty thousand bulbs were planted last fall, consisting of hyacinths, tulips, narcissi, jonquils, Spanish iris, etc. These bulbs are now bedecking themselves in the brightest and most gorgeous colors.

They will be at their brightest and best in May, and from this time on this flower

section will constantly change, being arranged to present a succession of flowers month after month during the whole season.

All these beds are filled with exhibits contributed by upwards of fifty of the leading horticultural firms of the country.

Fig. 2100 is one of our snaps showing a fine bed of tulips planted by James Vick & Sons, of Rochester, one sample of the many which attract the attention of the visitor; to the right is seen a portion of the famous triumphal bridge which, they say, was destined to express the triumphal struggle of the people of the United States to free themselves from the institutions of despotic ages and governments.

An interesting feature of the Horticultural Department will be the series of flower shows to be held from the opening day till the closing. The dates have been selected to suit the largest range of exhibitors, and are as follows :

- Carnations—May 1 to May 8.
- Tender roses—May 21 to May 25.
- Paeonies—May 28 to June 7.
- Hardy roses—June 18 to June 25.
- Sweet peas—July 23 to August 2.
- Gladiolus—Aug. 6 to Aug. 17.
- Asters—Aug. 27 to Sept. 7.
- Dahlias—Sept. 17 to Sept. 27.
- Chrysanthemums—Oct. 22 to Oct. 31.

In closing, we would appeal to all our directors and to all our Horticultural societies to keep up weekly shipments of fruit to Mr. W. H. Bunting during the season, entering them under their own name, or under that of the society; and everything new sent forward during the season will be credited in making up the diploma.

APPLE BOXES.—The regulation size of the apple boxes shipped to England from New York is as follows: *Inside* measurement, $9\frac{3}{4}$ inches high, $10\frac{3}{4}$ wide, $20\frac{3}{4}$ long.

This is about the same as the boxes adopted at the last meeting of the Ontario Fruit Growers' Association at Brantford, which was, *outside* measurement, $10\frac{1}{2}$ x $11\frac{1}{2}$ x 22 inches.

THE FRUIT MARKS ACT.

THIS important bill was passed by the House of Commons and was to come into operation on the 1st of July, 1901, but unfortunately for the fruit trade of Canada, and for every honest fruit grower in Ontario the thing has been almost nullified by the Senate. This body, evidently ignorant of the importance of clauses 6 and 7, actually took upon themselves to cut out what had been worked out by the wise heads of the Ontario Fruit Growers Association with the assistance even of those larger buyers and speculators, whose operations were likely to be most largely affected. Indeed it was not till after two years most careful thought, in committee and out of committee that the provisions of the bill were perfected in such a manner as to give liberty to all, and yet provide that the man who was willing to have his goods subject to inspection might adopt a certain brand which meant a certain grade. The following are the two sections which have been struck out by the Senate and which are the chief and most important ones in the bill:

6. No person shall sell, or offer, expose or have in his possession for sale any fruit packed in a closed package, upon which package is marked "A No. 1 Canadian" unless such fruit consists of well grown specimens of one variety, of sound, of nearly uniform size, of good color for the variety, of normal shape and not less than ninety per cent. free from scab, worm holes, bruises and other defects, and properly packed.

7. No person shall sell, or offer, expose or have in his possession for sale any fruit packed in a closed package, upon which package is marked the grade "No. 1 Canadian" unless such fruit consists of specimens of one variety, sound, of fairly uniform size and not less than eighty per cent. free from scab, worm holes, bruises and other defects, and properly packed.

Now by these sections a grower might contract with a buyer in England for a certain number of barrels of apples of grade No. 1 Canadian, a grade well defined,

making the packages subject to inspection, and the buyer could with confidence make such purchase without seeing the goods. This would develop a trade in apples along a new line, because any grower who could put up a few barrels of such defined grade would have a marketable commodity, which would command a certain price, and he would not be at the mercy of the apple buyer and speculator.

We do not think the venerable Senate of our Dominion has in this case shown that wisdom that should be betokened by their grey hairs. We close these remarks by adding a copy of the bill as finally amended and assented to by the Senate and House of Commons.

1. This Act may be cited as *The Fruit Marks Act*, 1901.

2. This Act shall come into operation on the first day of July, 1901.

3. In this Act, unless the context otherwise requires,—

(a.) The expression "closed package" means a box or barrel of which the contents cannot be seen or inspected when such package is closed;

(b.) The expression "fruit" shall not include wild fruit.

4. Every person who, by himself or through the agency of another person, packs fruit in a closed package, intended for sale, shall cause the package to be marked in a plain and indelible manner, before it is taken from the premises where it is packed,—

(a.) with the initials of the Christian names, and the full surname and address of the packer;

(b.) with the name of the variety or varieties; and

(c.) with a designation of the grade of the fruit.

5. No person shall sell, or offer, expose or have in his possession for sale any fruit packed in a closed package and intended for sale unless such package is marked as required by the next preceding section.

6. No person shall sell, or offer, expose or have in his possession for sale any fruit packed in a closed package, upon which package is marked any designation which represents such fruit as of finest, best or extra good quality, unless such fruit consist of well-grown specimens of one variety, sound, of nearly uniform size, of good colour for the variety, of normal shape and not less than ninety per cent. free from scab, worm holes, bruises and other defects, and properly packed.

9. No person shall sell, or offer, expose or have in his possession for sale, any fruit packed in any package in which the faced or shown surface gives a false representation of the contents of such package; and it shall be considered a false representation when more than fifteen per cent. of such fruit is substantially smaller in size than, or inferior in grade to, or different in variety from, the faced or shown surface of such package.

10. Every person who, by himself or through the agency of another person, violates any of the provisions of this Act shall, for each offence, upon summary conviction, be liable to a fine not exceeding one dollar and not less than twenty-five cents for each package which is packed, sold, offered, exposed or had in possession for sale contrary to the provisions of this Act, together with the costs of prosecution; and in default of payment of such fine and costs, shall be liable to imprisonment, with or without hard labour, for a term not exceeding one month, unless such fine and the costs of enforcing it are sooner paid.

11. Whenever any fruit packed in a closed package is found to be falsely marked, any inspector charged with the enforcement of this Act may efface such false marks and mark the words "falsely marked" in a plain and indelible manner on such package.

12. Every person who wilfully alters, effaces or obliterates wholly or partially, or causes to be altered, effaced or obliterated, any inspector's marks on any package which has undergone inspection shall incur a penalty of forty dollars.

13. The person on whose behalf any fruit is packed, sold, offered or had in possession for sale, contrary to the provisions of the foregoing sections of this Act, shall be *prima facie* liable for the violation of this Act.

14. Any person charged with the enforcement of this Act may enter upon any premises to make any examination of any packages of fruit suspected of being falsely marked in violation of any of the provisions of this Act, whether such packages are on the premises of the owner, or on other premises, or in the possession of a railway or steamship com-

pany; and any person who obstructs or refuses to permit the making of any such examination shall, upon summary conviction, be liable to a penalty not exceeding five hundred dollars and not less than twenty-five dollars, together with the costs of prosecution, and in default of payment of such penalty and costs, shall be liable to imprisonment, with or without hard labour, for a term not exceeding six months, unless the said penalty and costs of enforcing it are sooner paid.


15. In any complaint, information or conviction under this Act, the matter complained of may be declared, and shall be held to have arisen, within the meaning of part LVIII of *The Criminal Code*, 1892, at the place where the fruit was packed, sold, offered, exposed or had in possession for sale.

16. No appeal shall lie from any conviction under this Act except to a superior, county, circuit or district court, or the court of the sessions of the peace having jurisdiction where the conviction was had; and such appeal shall be brought, notice of appeal in writing given, recognizance entered into, or deposit made within ten days after the date of conviction; and such trial shall be heard, tried, adjudicated upon and decided, without the intervention of a jury, at such time and place as the court or judge hearing the trial appoints, within thirty days from the date of conviction, unless the said court or judge extends the time for hearing and decision beyond such thirty days; and in all other respects not provided for in this Act the procedure under Part LVIII of *The Criminal Code*, 1892, shall, so far as applicable, apply.

17. Any pecuniary penalty imposed under this Act shall, when recovered, be payable one-half to the informant or complainant and the other half to His Majesty.

18. The Governor in Council may make such regulations as he considers necessary in order to secure the efficient enforcement and operation of this Act; and the regulations so made shall be in force from the date of their publication in *The Canada Gazette* or from such other date as is specified in the proclamation in that behalf.

ST. LAWRENCE EXPERIMENTAL FRUIT STATION, No. 10.

 THE annual meeting of the Farmers' Institute of South Grenville was held at this place on June 12th, according to previous arrangements made by Mr. Creelman, Superintendent of Farmers' Institutes. The attendance was small, numbering about thirty five. The continued rains of May and early June delayed farmers with spring seeding and planting, and they are busy now with work that should have been done two or three weeks ago. However, the different sections of the riding

were well represented, some driving fifteen or sixteen miles to attend.

Prof. Macoun, Horticulturist Central Experimental Farm, Ottawa, assisted me in receiving visitors, and gave timely and valuable information during the day.

Shortly before noon the institute members held their annual meeting, elected officers and selected places for holding two regular and four supplementary meetings next winter.

After lunch, or basket picnic, a barrel of

Bordeaux mixture and Paris green was prepared and sprayed on full grown apple trees, care being taken to show both the right and wrong way to prepare the mixture and how to spray a large tree from four sides so as to cover the tree thoroughly and evenly with the finest spray possible. After the spraying was disposed of the soil was removed for a depth of 8 or 9 inches at a point directly in the centre of a square between four trees in well cultivated ground to show visitors the complete network of rootlets that occupy every inch of ground in an orchard of 15 years old or over, and illustrating the necessity of applying fertilizers to the whole surface and not around the stump of the tree.

Prof. Macoun paid particular attention to the matter of pruning, using typical specimens to illustrate the value of a close headed tree for this section of the country, explaining and showing the injury by sunscald where the main branches or trunk is exposed to the hot and bright sun of spring and summer.

While walking through the experimental orchard we endeavored to point out the most promising and desirable varieties and also gave practical illustrations in budding, grafting, inarching, bridgework, etc.

Before closing the meeting the Professor gave an address, touching on fruit topics generally and gave descriptions of desirable varieties of apples for planting in this section.

I also gave them a short talk on cultivation, drainage, humus, mechanical condition of the soil, fertilizers, etc., and also touched upon the question of our most injurious insects, classifying them in groups to show the special benefits of early, medium and late sprayings.

The visitors seemed much interested and I am sure returned to their homes feeling that they had had a profitable and pleasant day.

HAROLD JONES.

Maitland, June 18th, 1901.

THE TRIALS OF A LANDSCAPE GARDENER.— In some respects, a good landscape gardener, landscape engineer or landscape architect, whatever he may be called, in connection with the artistic and practical development of landscape and grounds—occupies an unenviable position, and he may be likened to the pioneers in any great cause where advances are met with distrust and antagonism born of ignorance.

He has, first of all to show that his work, though closely associated with the pick and shovel, is not of it, and has artistic realizations as well as natural and purely mechanical ones. He is a true artist with visionary ideas, largely, which are tempered by the practical molding of nature and brought into living facts. An undeveloped piece of land is seen by him through evolutionary lenses

and he pictures the effects which might be produced by grading, planting, arranging paths and drives or altering the course of streams. His first picture is, perhaps, barely more than an outline such as a painter might sketch preparatory to adding the colors and touches which almost put life into a portrait; the development and details are largely the result of study and practical ability, always accompanied by the artistic touch and nature appreciation which belong to a good landscape gardener.

But a small percentage of the public appreciates the qualifications possessed by the landscape gardener; to the remainder he is simply an unusually good gardener, or one who is too much above menial work and desires to theorize. They do not believe he can be on the same plane as men of other

professions, and he has to force his way to the front by showing results,—and these do not come quickly, as a rule.

Like any other profession, there are "quacks," to use a meaning popular term, and the true landscape artist must beat down the barrier of distrust which such men create continually. Their knowledge and practice are both limited and they will make any kind of bargain, whatever is best calculated to obtain a good sum for a little work—future results are of but little moment to these transient gardeners.

Where a man is recognized to be master of his profession, he should be hampered as little as possible, especially not before he has opportunity to present his ideas. Expense ought, so far as practicable, be a secondary consideration, just as it would be were a doctor of medicine called in for medical advice. The best should always be the highest aim in any walk of life,—and no one asks to receive value, even in advice merely, without offering full equivalent.—*Meehans' Monthly.*

OUR EXHIBITS AT THE PAN-AMERICAN.

DEAR SIR :

I am pleased to report to our many friends, through the columns of your valuable journal, that the exhibits in the various departments, in which our Province is interested, have up to the present time been very creditable, and have elicited many complimentary remarks from the large number of visitors that from day to day pass through the several sections.

The collection of minerals and ores from the Province, is unique in its character and makes a very comprehensive display of our mining wealth. This exhibit is in charge of Mr. Speller who is eminently well qualified to do justice to his native Province.

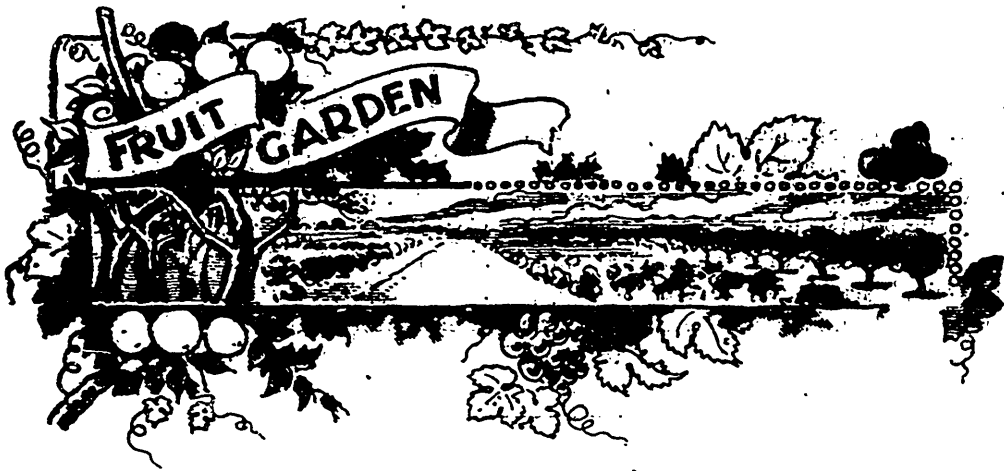
The fine collection of our native woods in the raw material and the manufactured condition, in the Forestry Building, under the superintendence of Mr. Swanson of Goderich, is calculated to give the average sightseer a very good idea of the vast extent and valuable nature of the products of our forests, and of the extensive industries connected

therewith which are as yet only in their infancy.

Coming to our own section, in which your readers may be more particularly interested, I am pleased to say that owing to the care and foresight exercised by you, as Secretary of the Fruit Growers' Association of Ontario, aided by the Department of Agriculture, we have been able up to the present time to put on the tables a most creditable exhibit of over thirty varieties of our standard apples, in very good condition indeed; these have been supplemented the past two weeks with a full supply of strawberries from a number of exhibitors whose names you will doubtless publish elsewhere. It is now desirable that our Horticultural Societies and our growers generally throughout the Province should follow up the present good impression that has been made, and, if this is done, I have no doubt that when the awards are finally made it will be a satisfaction to all concerned.

WM. H. BUNTING, *Supt.*





HINTS FOR FRUIT GROWERS—II.

SMALL VS. LARGE FRUIT FARMS.

FRUIT farming in Ontario is certainly a delightful occupation, and no wonder so many people of other callings are anxious to enter upon it. But the most pleasant line is not always the most profitable, as many persons have found to their cost.

The reason why many fail in this promising industry is because they attempt too much for their means, "they bite off more than they can chew," as the proverb has it. The ordinary grain farm comprises about 100 acres, and is counted rather small, if only fifty acres in extent; and a common, but mistaken, idea is that the fruit farm should be as large; and we find men without knowledge or experience buying farms of that size for fruit growing, and after years of wasted energy finding themselves still striving for a competence. They spread out their little money and little work so thin upon so large an acreage that it never can pay if they work till doomsday.

Fruit growing is horticulture, that is, garden culture, and not agriculture; it is the highest cultivation upon a small area of ground—it is intensive and not extensive.

Five acres will furnish work for one man and one horse, and ten acres for two, and pay far better than the work of the same men on one hundred acres.

Ten or fifteen acres makes a good fruit farm, and twenty-five quite a large fruit farm. The owner can then cultivate, prune, spray, gather the fruit and handle it as it should be done, and every year save some money for capital account.

THE SPECIAL FERTILIZER.

Of late years the fertilizer men have visited the fruit grower most persistently. We have nothing to say against fertilizers, and everything for them, because we must fertilize our orchards much more liberally if we are to receive good returns. But it has been urged that you should use a special fertilizer for grapes, another for berries, another for corn, etc., and that led Dr. Jordan, of Geneva, N. Y., to make the statement recently that "the day the special fertilizer is gone."

Greiner says in *Farm and Fireside*: "I have come to the conclusion long ago that the whole idea of making and using special fertilizers for special crops rests on an entirely wrong principle. The claims of

manufacturers that they can make a special manure for potatoes, another for cabbages, another for onions, and so on through the whole list, is absurd in the extreme. For some years I have been trying to convince manufacturers and the public at large of this fact. These claims of the fertilizer trade rest on the now generally exploded theory that we must replace the plant-foods in just the same proportion and quantities as they are removed by the crops. It is true that special fertilizers can, and frequently do, increase the crops to a material extent. But it is also true that we usually can obtain the same results by substituting one special fertilizer for another. We may raise just as good a crop of onions with the help of a potato fertilizer as with an onion fertilizer, and just as good a crop of cabbages by using one of these manures as by using a special cabbage manure. It is also true that, in a majority of cases, we can safely leave out one or even two of the chief elements of plant-food, using potash alone or phosphoric acid alone, or the two together, or nitrate alone or in combination with one of the minerals, as the case may be, and secure the same or even better results at a mere fraction of the cost of the special fertilizer. In fact, this is not so much a matter of the small difference in percentages or proportions as it is a matter of materials. And when it comes to this we may have at least some justification of talking about special manures. It is true that certain minerals seem to help certain crops. As I have stated on former occasions, nitrate of soda usually has a marked effect on cabbages, cauliflower, beets, spinach, sometimes on onions, etc. On the other hand, sulphate of ammonia has seemed to be markedly injurious to beets and some other crops. Muriate of potash has been found to be a safe form of potash to use on almost all crops, with the possible exception of beets. In this respect we must make our selection of materials according to the

crop we propose to plant, as also with proper consideration of the plant-foods which are already present in the soil in an available form. The fertilizer men cannot help us out with their advice. Observation and experiment must be our guides in this matter. And the same is true in regard to the quantities of these materials that we may use with profit.

THE CURRANT.

We cannot understand the low prices which have prevailed for such an excellent fruit as the currant, unless by the general depression of prices of all food products. If this is the explanation then, with the advance of prices for other fruits we may expect the same for the currant, which is so valuable for jams, pies, tarts and jellies; forming a most delightful and appetising article of diet. The Rural New Yorker gives some good points on pruning the currant, which we think worth giving our readers:

Our first trimming is done before planting; if our plants are one year old we simply cut back to a single stem, and allow only enough of this to remain for a start of three or four eyes, being careful to cut all other branches

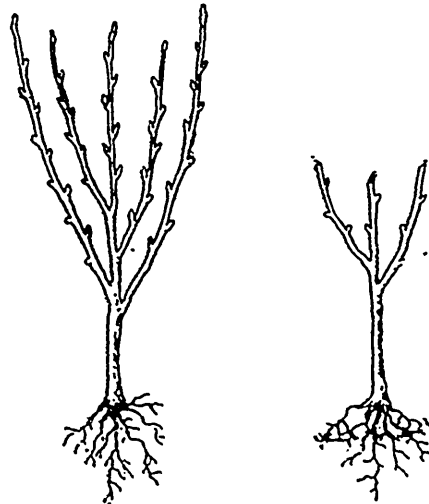


FIG. 2101. TWO-YEAR PLANT TRIMMED.

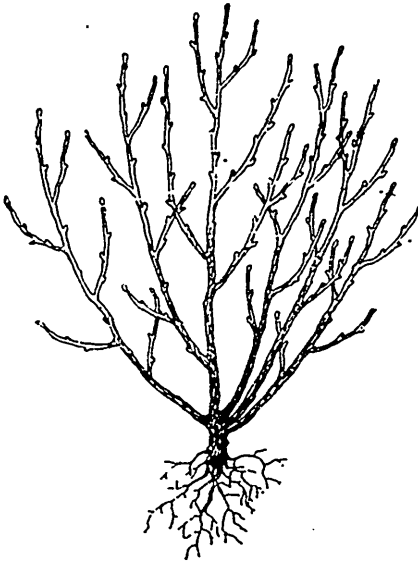


FIG. 2102. CURRANT BUSH THREE YEARS FROM PLANTING.

very close to the main stem, so as not to be troubled again by sprouting from the eyes that would otherwise be left. We endeavor to get a good stout plant as quickly as possible after planting. We allow from three to four good, strong stalks to grow in each hill; then carefully cut out all others as they appear. We do not favor the plan of keeping the fruiting hill to a single stem for several reasons. All currants are subject to the attack of borers after a few years from planting, which kill out the stalks they attack. When only one stalk is left to the hill, and the attack is made that destroys that hill, it creates a vacancy which in a few years often amounts to one-fourth to one-half of the plantation, while, if the hill contained three or four stalks, there would yet be left sufficient wood to produce a crop. A bush kept pruned to a single stem is also more liable in winter to be affected by the freezing and thawing of the ground than when the bush is formed by a number of stalks. So, too, the single-stem bush cannot so well support its load of fruit in time of high wind and rainstorms.

Our system of pruning is very simple; in fact, we do not believe in the wholesale butchery of a currant bush as advocated by so many. We want plenty of bearing wood, which is at its best form from three to four years old. We never shorten in the branches at all. We want them to grow as tall as they will. We find the foliage on the top branches a great protection to the fruit, as in the shade thus afforded it will hang, if necessary, several weeks after being fully ripened, which is sometimes of great importance when labor might be scarce, or is needed in gathering more perishable products, or in case the market becomes temporarily overloaded. Bushes closely cropped back at the ends, and exposing the fruit to the direct rays of the sun, are in danger of total loss of crop in case of wet weather followed directly by hot sun, which will scald the fruit as effectually as if hot water is poured upon it. Our trimming is simply a thinning process. We cut close to the ground all unnecessary young growth, retaining three or four main fruiting stems, and treat the remainder as so many weeds. After the third or fourth year from planting we allow several of the strongest young shoots to grow each year for the purpose of renewing the bush, and when these become old enough to bear we then cut out the weaker of the old stalks, and let the new ones take their place as rapidly as the old ones become partially exhausted and show signs of decay. Thus by properly fertilizing and caring for the soil we could run a plantation through a long period of years, and have wood of four to six year's growth, thus keeping the bush in prime condition all the while.

The more we grow fruit the plainer it becomes that there are a whole lot of pet hobbies, that have been handed down for years, that must go. We do not have time, and it is too expensive if we had it, to stand at a currant bush for half an hour each Spring

and clip a sprig here and there, and shorten back all growth to a certain fixed rule, and when we are through find we get no better fruit and no more of it than by a simple, common-sense method that requires so little labor, besides making our fruit liable to injury from sun and rain, and the bush itself becomes a prey to the borers through the process of pruning too closely. Understand, our idea is simply to thin out all unnecessary young growth, retaining three or four good, strong-bearing stalks, which are allowed to grow as tall as they will without any restraint whatever, and after they have given several good crops, and show signs of weakening, cut them out and have others coming on to fill their places without loss of time. Having done this much, let nature do the remainder and the results will be satisfactory. The pictures, Figs. 2101 and 2102, show our idea of it.

THINNING FRUIT.

This is one of the most important, and at the same time least practised of all the departments of fruit growing. So much of the vitality of the tree is consumed, indeed wasted, in maturing the seeds of the small worthless fruit, which afterwards goes to the cider mill, or should go there if not to the manure heap, that as a result all the crop on the tree is lessened in size. Experiments conducted at Maplehurst, and published in these pages, have already shown conclusively that the thinning of the peach crop actually increases the yield as well as improves the size. Now we have the results of Maynard's experience, at the Massa-

chusetts Agricultural College, showing similar results obtained with apples. The following paragraph is from Bulletin 73 :

Most of the fruit in the above orchards was thinned when about one inch in diameter, checks being left wherever necessary. Careful records were kept of the cost of thinning, and the value of the fruit on the thinning and unthinned trees was estimated as follows :

Variety.	Expense of thinning ¢	Yield Bbls.	Value. ¢ c.	Gain per tree, ¢ c.
Red Astrachan, thinned		4½	3.00	
Red Astrachan, unthinned. . . .	1.20	5	5.05	2.05
Early Harvest, unthinned. . . .		1½	0	
Early Harvest, thinned. . . . .	.15	1½	.18	.98
Hurlbut, unthinned		5	3.00	
Hurlbut, thinned. . . . .	.45	5	3.55	.55
Baldwin, unthinned		3½	2.00	
Baldwin, thinned. . . . .	.60	4	2.90	.90
R. I. Greening, unthinned. . . .		2	1.50	
R. I. Greening, thinned . . . . .	.15	2½	2 10	.60

The entire crop of the orchards was sold about September 1st for 75c. per barrel, the purchaser bringing barrels to the orchards, and the apples were picked, sorted, and put into his barrels without facing. This included all fall and early winter apples, such as Porter, Hurlbut, Pewaukee, Fameuse, Mother, Pound Sweet, etc. The Baldwins and late keeping varieties were sold in the same way for \$1.00 per barrel.

The difference in length of time consumed in thinning the trees was due first to the varying size of the trees, and second to the necessity of employing help unaccustomed to this particular work. With a large orchard and skilled labor the cost per tree would be largely reduced.

MANY FARMERS in Ontario appear to be under the impression that recent regulations adopted by the Ontario Government in regard to the destruction of the Codling Moth on apple trees are compulsory upon all persons. These regulations have been made

in accordance with the provisions of the Noxious Insect Act passed in 1900. This is a local option Act, and comes into force only in those municipalities that adopt it by by-law.

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

SOME RASPBERRY PESTS.

1. A very common insect in raspberry plots is the *Snowy Tree-Cricket* (*Ecanthus niveus*). Many samples of its work have been sent this month to this department, and there is no mistaking it when once observed, for the injury is quite characteristic. On old affected canes there are long, brown, open wounds, often two inches in length and opening into the pith. On last years canes, however, a row of punctures shows clearly

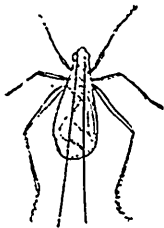


FIG. 2103. SNOWY TREE CRICKET.

where the injury has been done. If a slit be made lengthwise of the cane through these punctures, there will be seen a series of yellowish-white eggs inserted in the soft pith. Fig. 2104 shows how the eggs are arranged. The eggs are deposited late in the fall, and hatch out the following mid-summer. The young crickets feed largely on plant-lice, thus to some extent at least making amends for the evils they do when they become full grown. The adults are delicate, greenish-white creatures, and by the uninformed are seldom taken for cousins of the common, black crickets of the fields.



FIG. 2104.
EGGS OF SNOWY TREE CRICKET.

The remedy is simple. In the spring, cut out and burn all the punctured canes which are readily seen. By so doing, the eggs are destroyed, and all subsequent damage prevented.

2. Another insect that is giving considerable trouble this season is "*The Pale Brown Byturus*" (*Byturus unicolor*). At the time of writing (June 10th) the flower buds are suffering severely from the attacks of these small, hairy, yellowish-brown beetles. Later on, when the berries are ripening, the grubs of these small beetles will be found within the berries on untreated plants. When full grown the grubs descend and pupate in the ground where they remain all winter. About the end of May, the adults appear just in time to feed on the raspberry buds.

The remedy is a thorough spraying with paris green and lime solution just before the buds open.

3. In some localities, the *Raspberry-Cane Maggot*, a species of *Phorbia*, causes considerable damage to the young raspberry canes. The adult is a two-winged fly, and a close relative of the fly which produces the Cabbage-Root Maggot. The eggs are laid near the tips of the canes, and the young maggot bores its way downward in the pith and girdles the cane inside the bark. The result is that the part above the girdle soon wilts, and becomes dark blue in color. The maggot continues to bore downward to near the base, where it transforms into a pupa, and remains until the following spring, when it comes out as the adult fly.

The remedy in this case is also simple and consists in gathering the wilting tips and burning them. The grub is destroyed and no further damage can be done.

4. The fungus *the Orange Rust* (*Caeoma*

nitens) is already showing itself in some localities. The orange-red spots on the under surface of the leaves are clusters of spores which are readily blown to other leaves. Affected plants should be taken up and burned as soon as the orange spots appear. There is no use in attempting to save the plant by spraying, for the threads of the fungus are already present in the canes, and even in the roots. Spraying, however may prevent the spores from developing on exposed unaffected plants, and should be practised, for the *Anthraxnose* will at the same time be kept in subjection.

source of infection for neighboring trees is removed. It is not clear how trees become inoculated, whether by insects, birds, wounds, or other sources, but it is stated by the most eminent German authority that the trunk cannot be infected after the age of twenty-five years. When the fungus has effected an entrance, the mycelium, or mat of threads, remains perennial in the bast, cambium and wood, gradually extending and absorbing the contents of the cells. Considerable turpentine is usually excreted from the cells attacked, and sometimes exudes from fissures in the bark.

AN ABNORMAL GROWTH ON THE SCOTCH PINE.
(*PINUS SYLVESTRIS*.)

A correspondent from Stratford sends me under the date of May 30th some terminal twigs of Scotch Pine with barrel-shaped swellings which were more than thrice the diameter of the twigs. (Fig. 2105).

He says, "Last year or perhaps the year before was the first time I noticed anything wrong with the tree, and last year I cut all the limbs off where there seemed to be dead leaves as the result of some disease or other, but this year I find another crop of which the sample I am sending is only part. This year the small branches near the top of the tree, which is 30 feet high, are the ones most affected. What had I better do? If a rigorous cutting off of the branches affected is likely to end in any good result, without in the meantime endangering the other trees, I think I can possibly save the tree."

These abnormal growths are produced by a fungus belonging to the Rust family, *Peridermium*. On some of the specimens, the cluster-cups, or aecidia, were visible, and the spores were abundant.

The only line of treatment suggested by the life-history of this fungus is the destruction of diseased trees, for they will die in a short time at any rate, while the direct

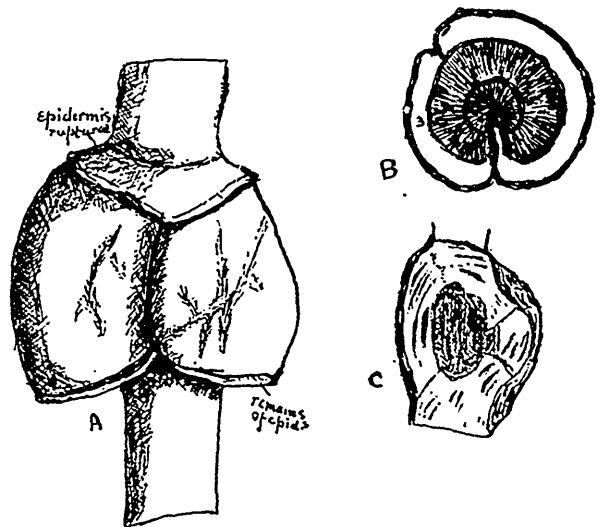


FIG. 2105.

Fig. A shows the appearance of one of these swellings, and the remains of the ruptured epidermis may be seen at the top and bottom. The new bark is fissured extensively. There is always one prominent vertical suture indicating the place where the disease originated, and where the cambium was first killed. Fig. B. shows clearly the three year's growth of the gall. The wood of the first two years has become discolored, and is beginning to decay. C. is a vertical section through the gall in the line of the vertical suture.

QUARANTINE OF AMERICAN FRUITS IN GERMANY.

Dr. J. B. Smith, Entomologist of the New Jersey Experiment Station, in his report for 1900 contributes an interesting note regarding the method of examining fruit shipped to Germany from America, i. e., United States and Canada :

"All the fruit passing through Hamburg is unloaded at the "Fruchtschuppen", or fruit dock, an immense covered space, which can be heated in winter. Here all consignments are separated, reported to the director of the station, and he selects a sample for inspection. The bill of notice must give the number of barrels or crates from each general locality, and the number of barrels each variety. A fee is exacted for each inspection. At least one barrel of each variety is taken out from each general locality. Should the consignment contain one barrel of Greenings from New York and one from Virginia, both would be examined; but if there were ten barrels of Greenings from Virginia probably one only, certainly not more than two, would be selected. Each barrel is tagged for identification and removed to a locked enclosure at the end of the "Schuppen." About half the contents of each barrel are dumped into an oblong basket, tagged to agree with the barrel, and transferred on a car to an elevator which carries the basket to the second floor of the station which is fitted with examining tables and study tables for the technical experts. The basket of apples is turned out upon a table where three or four examiners handle and look closely at every fruit. These examiners are instructed to pass only perfectly clean fruit, placing on one side every one that has scale of any kind or any apparent disease or abnormality. Should all the fruit prove clean on first inspection, the barrel is refilled, given a tag which certifies it has been examined, found clean and releasing the lot of which it is a sample. The consignee is then

at liberty to remove the shipment; or he may leave it a specified time and sell at auction or otherwise on the dock.

If on the first inspection say a dozen apples are sorted out as affected in some way, these are referred to one of the experts who determines the character of the infestation. If anything other than the pernicious scale, the occurrence is simply recorded for use in making up statistics of work done. Should the infestation prove San Jose Scale, all the fruit of which that barrel was a sample would be at once excluded. A printed notice is sent to the consignee who is accorded a limited time to ship the fruit out of the country. It cannot pass the gates of the "Schuppen" cityward without the official stamp."

"It may be interesting also to note that in the term "American" the Germans include Canadian as well as United States products, the shipments of 1898-99 dividing as follows according to origin :

	Barrels	Crates
Canada and British America	14,484	133
Eastern United States.....	11,875	
Western States including		
California:.....	7	691
Without specific locality....	2,865	80

It appears, therefore, that Canada is distinctly in advance in her efforts to find foreign markets, while California growers made a very good showing. Of the fruit from the Eastern United States the majority in which a definite locality was mentioned came from Virginia, New York seeming to come next.

It is of interest to know that in 1898-99, 582 crates and 26 barrels of apples, and 1 crate of pears were found infested with San Jose Scale. Of these all the crates and 7 of the barrels came from California and Oregon. One barrel of infested apples came from Virginia and 2 from New York. Sixteen barrels and five crates were of undetermined locality, the chances being that at least 14

of the barrels were from the Pacific Coast.

Of the apples imported in 1897-99, two-thirds were Ben Davis, but in 1898 1899 nearly 15,000 were Baldwins and only 2,204 were Ben Davis, Northern Spy exceeding it in 2,266 barrels.


Reports for 1899-1900 are not available at the time of writing."

From the foregoing, it is clear that if Canada wishes to hold her own in the German market, she must send fruit free from the San Jose Scale. This side of the Scale question, I venture to state, has not been studied sufficiently by our fruit growers.

W. LOCHHEAD.

O. A. C., Guelph.

UNIFORM PACKAGES.

 UR readers will remember that we gave an account on page 99 of a committee meeting at St. Catharines at which the subject of uniform packages was carefully discussed by some of our most prominent fruit packers and shippers, and finally an agreement was reached, favoring the use of certain uniform sizes. Mr. E. D. Smith, M.P. for Wentworth, was at the meeting, and agreed to present the wishes of the growers to the House of Commons at Ottawa.

We find that these regulations as agreed upon by us, have been adopted by the House of Commons in bill No. 117, entitled 'An Act respecting the packing and sale of certain special commodities,' of which Section 5 reads as follows:—

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

- (a) At least four-fifths of a quart, or
- (b) Two-fifths of a quart.

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

- (a) Fifteen quarts or more;
- (b) Eleven quarts, and be five and three-quarter inches deep perpendicularly, inside measurement, as nearly exactly as practicable;
- (c) Six and two-thirds quarts, and be four and

five-eighths inches deep perpendicularly, inside measurement, as nearly exactly as practicable; or

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

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

4. This section shall come into effect on the first day of February, one thousand nine hundred and two.

These sizes will seem arbitrary to a reader at first sight, until he perceives that they are based on the sizes of the fruits which the baskets are intended to contain.

The box of berries is the ordinary so-called quart or pint berry basket, which has been so long in use in Ontario—being of the dimension of the old Winchester quart or pint.

The eleven quart basket is the ordinary handled peach basket, commonly known as the twelve-quart basket, probably because it held about twelve berry boxes full of fruit, and the $6\frac{2}{3}$ quart is of a depth to take two layers of fine peaches, or about nine pounds of grapes, and thus it will take the place both of the ten-pound grape basket and of the 6-quart peach basket. It will indeed prove to be the most popular basket in use for cherries, plums, peaches and all choice fruits.

Certainly it is high time that some regulation was made, for, as it is, basket factories

are at a loss to know what to manufacture, and growers are constantly tempted to use a basket slightly short of that used by others, hoping thereby to get the same price for a

package containing less fruit. No doubt the venerable Senate will exercise their wisdom (?) over this bill also, and we await with patience the result.

PACKING AND CARRYING FRUIT.

PROF. ROBERTSON has given evidence before the Agricultural Committee of the House of Commons as to the injury done to the Canadian apple trade by dishonest and improper packing. He spoke of the need for properly-ventilated stowage on steamers, and read a number of reports from Mr. Grindly, the department's agent in Liverpool, showing that where apples were carried in heated holds they arrived in bad condition. The shipments to Glasgow arrived in the best condition. This year the steamship companies were showing a desire to co-operate with the Government in securing proper carriage of apples.

This question of having our apples honestly packed and all our fruit landed in Great Britain in good condition is most important. Legislation in regard to dishonest packing cannot come too soon, while every means in the Government's power should be utilized to induce, and, if need be, compel steamship companies to provide properly ventilated and isolated chambers for the carriage of fruit. But we are making progress along these lines, and a few years will doubtless witness a large improvement in the direction of better shipping and carrying facilities for all our perishable food products. In this connection the following comments on our fruit trade with Great Britain, taken from a recent issue of *British Refrigeration and Allied Interests*, will be found interesting:

"The recent shipment of Canadian fruit to this country, to which reference has already been made on several occasions in the

columns of this journal, and as regards the quality, of which we give in another part of this issue an interesting report by a well-known expert, has sufficiently amply demonstrated the fact that the initial difficulties to the enterprise have been satisfactorily overcome, and that the time has now arrived when Canadian fruit, not only of the hardier class, but also that of the most delicate description, will be able to compete on exceedingly favorable terms in the markets of this country. Some years back, when shipments of Canadian fruit were first made, the result was disastrous, and the project was thus nearly killed in its earliest infancy. Nor, indeed, was his failure much to be wondered at when it is to be considered that fruit, beef, butter, etc., were all stored on board the steamer in the same cold chamber, although the temperature suitable for their preservation differ very considerably. For instance for fruit we do not want anything lower than 36 degrees Fahr., nor appreciably higher than 40 degrees Fahr., whilst for butter the temperature might with advantage be as low as 22 degrees Fahr., and for beef one of 28 degrees Fahr. would be the best. Under such circumstances it is not very surprising that as the temperature of the cold store was kept suitable for the latter goods, the fruit suffered very much damage, and when exposed to the warm air on its arrival in this country, the tissues burst, and it perished within twenty-four hours.—*Farming World*.

ORCHARDING—I.

MANAGEMENT OF THE ORCHARD.

THE fertility of the land is its productive power; tillage is one of the means by which this productive power may be increased. Moisture is an important factor in fruit-growing. The importance of water to the apple and peach tree was very clearly shown by the experience of last summer. The rainfall was much below the normal amount for the months of July, August and September. What was the result in untilled orchards as compared with that in well tilled fruit lands? As a rule the apples in sod orchards were undersized; they lacked color and were often deficient in natural juiciness. This fruit presented a marked contrast to that grown in orchards that had been tilled carefully throughout the season.

The fruit-growers' program of cultivation.

—Of what should this consist? In the spring his object is to get his soil laboratory in working condition as early as possible. To do this he plows the orchard land. The plowing of the ground does several things. It lowers the water-table; it increases the water reservoir; it allows the air to permeate; it encourages the nutrifying processes. While as a rule the plow should be the first implement introduced in the orchard in the spring, there are conditions which prohibit its use. Obviously it is not the ideal implement with which to carry on summer cultivation. In spring it not only releases and tends to remove soil water, but it adds to the soil's capacity for holding water. In later summer the energies of the fruit-grower should be directed to saving for the use of the tree as much moisture as well drained land will naturally hold. The disc harrow is probably the most effective implement to follow the plow. This pul-

verizes the clods, and tough lumps of soil and leaves the land in good condition for the smoothing harrow which should follow the disc.

The primary objects of tillage are to save moisture and release plant-food rather than to kill weeds. A farmer may ask, "Should I use the cultivator just often enough to keep down weeds or ought I to cultivate at least once a week?" Weed growth may not be looked upon as a reliable guide to the orchardist in the matter of cultivating. The character of the soil and the amount of rainfall together form a much safer standard to guide our practice. If a heavy rainstorm should follow within twenty-four hours of cultivating the orchard, it might be necessary to repeat the work within the next forty-eight hours. The surface mulch must be maintained.

There is a distinct difference between the status of an orchard when viewed as a farm crop, and a field of wheat or corn.—The apple tree is planted in a certain place; it is fixed and immovable, and is dependent for sustenance on the food within reach of its roots. The situation may remain unchanged year after year. The tree may continue to starve or to revel in high living. The drain on the soil's store-house of food increases year after year and is emphatically augmented when bearing age is reached. These conditions make the tree at once a hard boarder and a helpless boarder. The wheat plant has only a year of existence. If the conditions are favorable it produces flowers and seed, and the stem with the grain is gathered; but the root is left in the ground to compensate in a measure for the plant-food used in perfecting the kernel. Farmers manure wheat ground every year. Should

not fruit trees receive treatment equally generous? Do not the trees make an annual draft on the plant-food of the soil?

Fruit trees are in themselves a sufficient crop for the ground on which they stand.—This is especially true after the tree comes into bearing. We may deviate somewhat from the rule in the case of apple trees which are planted thirty-five or forty feet apart. In cases of this kind other crops may be grown in the interspaces. What type of crop to grow is an important question. Shall we grow something cultivable, or a cereal, such as wheat or oats, that occupies the entire surface of the ground? It may be said that the soil moisture is saved somewhat in proportion to the area of surface cultivated. In the case of the wheat crop, not only does the plant compete with the tree for moisture and available plant-food, but it allows of greater evaporation from the soil than occurs in the case of a plant grown in rows—like the turnip, sugar beet or potato. Then, too, the wheat plant requires its moisture in the early part of the season; so does the apple. At this time the tree is making wood and the wheat plant is making kernel. We should avoid, as far as possible, this injurious competition.

Orchards require clean cultivation during the tree's growing season, but the soil also needs humus to preserve a good physical condition and to promote chemical activity. The necessity of maintaining the supply of humus has particular force for the fruit-grower. When an orchard is constantly under clean tillage the store of humus generally diminishes. The truth of this statement finds ready corroboration in the story of worn out nursery lands, where the drain upon humus has been excessive. With the nurseryman, cultivation is essential to the production of salable trees. The whole strength of the soil is reserved for the tree. No weed growth is allowed to compete with the tree during its period of growth, and the

ground is often kept clean throughout the entire season as a safeguard against mice and rabbits. When the tree is dug it is removed literally root and branch. This is worse than the case against the wheat or corn plant, where the roots are left in the soil and add to the store of humus. In order to preserve the balance, the nurseryman is obliged to do one of two things—he must practice a rotation which will keep up this supply, or he is obliged to constantly seek new land. It is due to this fact that large quantities of fruit stocks and nursery trees are grown in the new lands of the western plain's country.

A cover-crop is a crop sown in the orchard at the close of the tillage season, to produce a supply of humus, to promote nitrification, to prevent the leaching and eroding effects of fall and spring rains, and to protect the roots of the trees from excessive cold. The cover-crop is one of the most important factors in successful orcharding at the present time. Orchard cultivation has been urged for a number of years; it has been practiced in many localities, and the results obtained have encouraged orchardists to continue the practice; but clean cultivation has its limitations and must not be carried too far. It should apply only to the growing season of the tree. The ground at that time should be in perfect condition of tilth. The dust blanket should be so thoroughly maintained that the film moisture of the soil is completely preserved. In this condition the soil furnishes a favorable seed bed, and even small seeds may be expected to germinate successfully.

The cover-crop is sown in mid-summer and is expected to produce a mat of surface vegetation that will cover the ground thickly before autumn comes. One of the difficulties in growing cover-crops is to obtain a good "catch." If the orchard has not been thoroughly cultivated a good catch is hard to secure. On the other hand, if tillage has

been thorough there is usually no trouble in obtaining a good stand. As a rule the smaller the seed, the more uncertain the catch. Why? Small seeds should not be covered deeply. They are therefore more at the mercy of external conditions than are large seeds, which in themselves have a considerable store of nourishment, and for that reason may be planted deeper. Clover is often sown on the surface, while peas and beans should always be drilled in. Rolling the ground during dry weather, after sowing the seed, is very important. In planting the nursery tree we have said that the earth should be packed firmly against the roots that they can readily absorb moisture. So it is with the seed awaiting germination; it germinates promptly when it is able to absorb soil moisture and is under the influence of a sufficient degree of warmth. For this reason clover seed rolled in, will germinate quicker on dryish soil than unrolled seed. The character of the soil must be taken into consideration in connection with the treatment it should receive.

Cover-crop plants are of two types: leguminous and non-leguminous. The leguminous are usually the more valuable.—Among desirable leguminous plants for the orchard are the clovers, peas, beans and vetches. Among the non-leguminous types are buckwheat, rye and rape. The legumes are nitrogen collectors. For this reason they are much more valuable than the non-leguminous class. As a rule, too, roots of clover penetrate very deeply. In this respect they are of particular value in improving the physical qualities of the soil.

To obtain the full benefit of the cover-crop it should be plowed under early in the spring. There is a temptation to give the cover-crop a chance to make growth in spring before plowing it under. This is bad practice except when the land has too much moisture; in these circumstances it may be of some service in using surplus water. If

it is allowed to grow strong and rank before turning under, the fibre becomes tough and does not readily decay. On the other hand, if turned under early in spring, as soon as the ground can be worked, decay sets in promptly, and the humus thus produced becomes a prompt worker in carrying out its mission in the soil. Think of the mission of green manure.

Manures for orchard crops are mainly of two kinds: those from domestic sources and those produced by the manufacturer. The latter are commonly called "commercial fertilizers."—Barnyard manure influences the soil in two ways: (1) By means of the plant-food furnished; and (2) by the addition of vegetable fibre, which improves the physical condition. If the land is sticky clay it is made more porous and less compact. The insoluble particles are separated and are thus more readily acted upon by dissolving and nitrifying agents. Sandy land is improved also by having the interspaces filled with vegetable matter, which greatly increases its absorptive capacity. A leading difference between the commercial fertilizer and the barnyard manure lies in this secondary function possessed by the latter, viz.: that of improving the physical character of the soil. The commercial fertilizer cannot be counted on to improve greatly the physical character of the soil; its chief function is to furnish plant-food. The indirect or secondary effects of commercial fertilizers are slight. The commercial fertilizer adds to the soil the essential food constituents, while the barnyard manure does this and in addition helps to make the constituents, already in soil, serve as food to the plant. These considerations show at once the value of barnyard manure for hard and dry soils. It is a general fertilizer; it furnishes a certain amount of the three principal elements of plant-food: nitrogen, phosphoric acid and potash. Commercially fertilizers are often special manures. The term "phosphates,"

which applies only to fertilizers whose chief constituent of fertility is phosphoric acid, is often erroneously taken by farmers to mean a complete manure.

The supply of barnyard manure is limited; it cannot always be obtained. What shall we substitute?—The orchardist may not be able to secure barnyard manure, but he can always make use of "green manures." By this term "is meant a crop which is primarily grown for the purpose of improving the soil and not for the harvested product."

These green manures are of two classes: nitrogen collectors and nitrogen consumers.—The members of the first class are able to gather nitrogen from the air in addition to that which they take from the soil. Those of the second class can only obtain it from the soil. When we grow the nitrogen-collector and plow it under, we save the nitrogen taken from the air as well as that from the soil. When we grow the nitrogen-consumer and plow it under, we have only given back to the soil in a slightly changed form the nitrogen originally taken from it.

Commercial fertilizers are of two classes: standard high-grade fertilizers, and those which are variable in composition and availability, called low-grade—Among commercial fertilizers there are certain materials whose composition and availability are fairly constant. Nitrate of soda, sulphate of ammonia and dried blood are called high-grade standards because their composition may be depended upon to vary but little. These are nitrogenous fertilizers, and the nitrogen is usually in a form of ammonia which is immediately available.

In the phosphates the phosphoric acid is not directly available. Because of this fact the standard supplies of phosphoric acid are derived from these materials after they are manufactured into superphosphates. There are many kinds of these superphosphates. They may be considered standards, as they

always contain a high percentage of available phosphoric acid. South Carolina and Tennessee rock phosphates are the standard basic materials from which superphosphates are manufactured.

There are high-grade potash fertilizers. Among these are the German potash salts which may be depended upon to give a fairly constant percentage of potash. The above and other nitrogenous, phosphatic and potassic compounds are worked over by the manufacturer of commercial fertilizers, and form what we commonly know as commercial fertilizers.

The different food elements should not be expected to perform certain specific things in the building up of the plant.—The question is often asked, "Can I, by the use of certain fertilizers, accomplish certain definite results." It is unwise to give any such assurance. It may be safe to generalize somewhat as follows:

Nitrogen.—If nitrogen is used in excess, it is more than probable that a luxuriant growth will result. If the orchard, therefore, is making plenty of wood, and is carrying healthy foliage, this would suggest that nitrogen, as a special fertilizer, was not needed. If on the other hand the growth is meagre and stunted, an application of some material containing nitrogen in excess might be expected to give good results. The effect of fertilizers is not always seen on trees the first or even the second year of their application. The results may follow two or three years later. This will depend of course, in a measure, on the nature of the fertilizer used. If, like nitrate of soda, it is immediately available, then results may be looked for sooner than if it is the nature of barnyard manure, which can only be used by the plant after thorough decomposition has taken place.

Potash.—This fertilizing constituent is always looked upon by fruit growers as being very important. It is well to remember that

tillage increases the amount of available potash in the soil. The principal sources of potash are the German potash salts, chief among which are kainit, muriate of potash and sulphate of potash. An available form of potash is that found in unleached hard wood ashes. These should contain from four to eight per cent. of the potash, the amount depending upon the wood from which the ashes were derived and the way in which they were kept.

Phosphoric acid.—Plain superphosphate contains about sixteen per cent. of phosphoric acid. This is usually applied at the rate of from two to three hundred pounds per acre. There are several brands of bone fertilizers. These are sold as “treated”


and “untreated.” The untreated varieties give up phosphoric acid very slowly. The treated on the other hand are more or less immediately available.

The gist of the whole matter of fertilizing orchards consistently and sufficiently may be expressed as follows: Luxuriant growth probably means abundant nitrogen. Stunted growth calls for nitrogen, or water, or both. Fruit deficient in color and flavor suggests the freer use of phosphoric acid and potash; but without humus in the soil, the use of commercial fertilizers may be an extravagant if not useless practice.

JOHN CRAIG;

In Cornell Reading Course.

NEW CHERRY WAYS.

 CANNED cherries: For canning, sour cherries are best. Select fine, ripe fruit, stem, wash and stone. To every 1 quart of fruit allow $\frac{3}{4}$ lb. white sugar and $\frac{1}{2}$ quart water. Put the fruit and sugar into the preserving kettle in layers and let stand one hour. While waiting, simmer in the water to be added 1 tablespoon of the stones for every quart of cherries, strain, then add sufficient boiling water to make up what was lost in simmering. Add this to the fruit, bring quickly to a boil, let boil five minutes and seal boiling hot.

Cherry Cheese: Stone red cherries and chop them very fine. To every 1 lb. fruit add $\frac{1}{2}$ lb. white sugar, and simmer very slowly until a smooth stiff mass. Pour into glasses and when cool seal like jelly. This is delicious served with whipped cream and sponge cake, or used as a filling for layer cake or sweet sandwiches.

Cherry Pie: Line a pie tin with good puff paste, and sprinkle over it 1 tablespoon flour and $\frac{2}{3}$ cup sugar, over this place 1 pint stoned cherries, cover with an upper crust and bake in a quick oven to a light brown.

Cherry Syrup: Select large, ripe cherries and extract the juice as for jelly. To each quart juice allow 3 lbs granulated sugar, put the sugar with 1 pint boiling water into a saucepan and stir until it is dissolved, then add the cherry juice and let come to a boil. Skim well, boil one minute, bottle and seal. This makes a delicious pudding sauce, or is excellent for serving with hot cakes.

Spiced Cherries: To 7 lbs. cherries allow 1 quart vinegar and 4 lbs sugar. Mix $\frac{1}{2}$ oz. ginger root, 1 teaspoon ground cloves, 2 teaspoons allspice, 2 teaspoons cinnamon and $\frac{1}{2}$ teaspoon ground mace, tie in a muslin bag and put it in a preserving kettle with the sugar and vinegar. When it boils add the cherries, bring to the boiling point again and pour carefully into a jar. The next morning drain the vinegar from the fruit, heat it again and pour it over the cherries. Do this three or four days in succession, the last time boiling the juice down to just enough to cover the fruit. Add the fruit, let come to a boil and can.—*American Agriculturist.*

BEES IN THE ORCHARD.

THE relationship of bees to fruit culture is a threadbare and dangerous subject to discuss at a farmers' institute because the slightest variation from the whole truth is liable to make some sturdy fruitgrower wax warm and ask some questions that would spoil the best argument in the world.

Being naturally truthful and interested in both fruit and bees, I should come as near seeing things as they are and telling it straight as anybody.

I shall take the ground to commence with, that bees are no benefit whatever to any kind of fruit after the blossoms have fallen from the tree and if any relationship exists between bees and ripe fruit, it is the relation of the small boy to a piece of bread and butter. I do not believe that bees are any benefit either grapes or figs at any time. The blossom of the grapes seems to belong to that class of inconspicuous flowers sometimes called wind-lovers. The pollen in these flowers is a dry powder which is carried by the wind from the anthers of one flower to the stigma of another. The fig depends upon an insect to bring its lover, but that insect is not the honey bee, its name is *blastophaga grossorum*.

Many animals, birds and insects have found out that figs and grapes are good to eat, and man has to fight for his share, the birds and yellowjackets bite holes in the fruit, and when they go away the bee takes possession and cleans up the balance.

Bees will not eat fruit if there are plenty of flowers at the time the fruit ripens, but unfortunately there are not many flowers in California at this time. Fruits that ripen in May, June and July usually escape injury from bees, because the bees are busy at that time storing honey from the sage and other wild flowers. For this reason the apricot is

not troubled by bees except in dry years when there are no wild flowers.

The pear, peach, nectarine, prune, plum, and apricot depend on bees and other insects to fertilize their blossoms, and when only a few trees are planted in a place the other insects may be sufficient, but when man plants large numbers of these trees in a mass it becomes necessary to also mass the fertilizing agents, and bees are the only insects that can be practically used for this purpose.

I have known several cases where large orchards of these fruits were a failure until some wise friend suggested bees as the remedy. The bees were tried and immediately the orchards became paying properties.

I have repeatedly covered branches of these trees with house lining just before the tree began to bloom, so no bees could get to the blossoms, and left the cover on until the blossoms had fallen. The result was also the same—a total failure of the crop on the branches so covered.

If I owned a large orchard of any one of these fruits and my neighbors did not keep bees I would buy at least one colony of bees for each four acres of fruit and keep them in or near the orchard while the trees were in bloom, and if they gave any trouble when the fruit was ripe would move them away, but the chances are that the damage to ripe or drying fruit would not pay for the trouble of moving the bees.

Oranges, lemons, olives, apples, quinces and nut trees receive great benefit and no injury from the presence of bees, and large orchards of any of these fruits should have a corresponding number of bees near them. Olives and almonds do better where varieties are mixed to secure cross-fertilization.

The pollen in nearly all fruit blossoms and other flowers that secrete honey is heavy


and adhesive and cannot be carried by the wind from one flower to another, and these plants would cease to exist if they had not the power to bribe the insect world, with a little drop of honey, to carry this fertilizing pollen from the anthers of one flower to the stigma of another.

In nearly all fruit blossoms the anthers and stigmas do not mature at the same time

in one blossom; this is a provision of nature to secure cross-fertilization and improvement of the species.

This great law of nature, that all vegetable and animal life must depend on fusion, is the great central idea in the plan of creation. It is the doorway to all progress and improvement. It is evolution.—*California Cultivator*.

THE LADY WARWICK AGRICULTURAL ASSOCIATION FOR WOMEN.

ISS Edith Bradley, Secretary for the above Association, Reading, England, sends us copies of the Quarterly Leaflet, published by Lady Warwick in the interests of her agricultural scheme for women, and in her accompanying letter makes the following explanations:

"I am sending you herewith full details regarding the Lady Warwick Agricultural Association for Women, and the last annual report will lay before you the various branches of work which we take up.

"The Association has been formed to bind in one strong organization those in all parts of the world who are interested in women's work in the lighter branches of Agriculture, such as horticulture, dairy-work, poultry and bee-keeping. We admit Societies as associates, that is, the secretary pays on behalf of the Society 5s. per annum, and this fee covers: (1) One year's subscription to the *Woman's Agricultural Times*, into which we propose to introduce the following changes, in volume 3, which commences with the July number:

- (1) Articles by experts on horticulture, dairy-work, poultry and bee-keeping.
- (2) Articles on the work already accomplished by women in the lighter branches of agriculture.
- (3) Lists of all the agricultural and horticultural shows to be held throughout the country during the current year.

"(2) Free use of the Information Bureau, and in connection with this we shall be very glad to receive from the secretaries of Societies in affiliation with us, any information regarding the possibilities of women's work in the lighter branches of Agriculture in Canada, or elsewhere. (3) Free use of the Registry, through which partners, trained workers, posts, etc., may be obtained, and through which we would be glad to put you into communication with any woman who intended going out to Canada, and who are trained in the work.

"We should be very glad indeed to place at your disposal any of the resources of our Association. It is somewhat difficult of course at this distance to lay down rules for the formation of a confederation of the Horticultural Societies in Ontario, but you may rest assured of our interest and hearty co-operation in any work in which we may be of the slightest assistance to you.

"If you will communicate with me on any definite points, I shall be only too pleased to give the matter my consideration and attention."

Perhaps it would be to the interest of our Horticultural Societies to become associates of the Association, and receive all publication, and they would then be in touch with the work, and it might result in mutual advantage.



GREENHOUSE, WINDOW AND GARDEN—VIII.

THE GREENHOUSE.—All repairs to benches, etc., and any painting required in the greenhouse or conservatory should be attended to now that there are few plants indoors.

If outside shading is used on the glass it will probably require renewing.

All chimney or flues connected with the greenhouse should be cleaned out. Hot water boilers and pipes should be emptied and refilled with clean water. Put a few pounds of common soda into the supply tank or expansion pipes, it will help to prevent the boiler from rusting. Oil all the hinges of the doors on boiler or furnace, and leave them open, it may save you both time and money when you start them in the fall. Summer idleness is more injurious to boilers oftentimes than the winter's work, if proper precautions are not taken now to keep them in good order during the summer.

Cineraria seed should be sown now to ensure flowering results in January or February. Sow the seed in pots or shallow boxes or seed pans, put the latter in a cold frame or beneath a hand light out of doors. Place a sash over them and keep the glass well shaded, until the plants are nicely established. Give plenty of air by tilting the

sash. Sprinkle tobacco dust and wood ashes around outside the seed pots or boxes to prevent thrip, aphid, and slugs or snails from attacking them. Slugs are very partial to seedling cinerarias, and will soon clean out a pan of seedlings unless checked. A cool north aspect, is the best for raising seedling cinerarias. A few pots of cinerarias when in flower are a great addition to a bench of plants in the winter, after the chrysanthemums are over.

If roses are grown on benches it is time to plant them. Give the plants plenty of air and water, especially the latter when once they are well started into growth. Syringe the plants daily and keep all buds picked off as soon as they appear, allowing none to even approach near to the flowering stage. Three-fourths good clay loam sod well rotted, one fourth of well rotted cow or stable manure, and a little bone meal, will make a good compost for either bench or pot roses.

Use plenty of water on the floors of the greenhouse especially if occupied with ferns and similar tender exotic plants.

WINDOW PLANTS.—Plants in window boxes must have plenty of water at the roots. It may be necessary to go over them three or



FIG. 2106. CINERARIAS.

four times with the watering can or hose pipe, because one watering will scarcely more than moisten the top of the soil when the boxes become full of roots, as they do usually at this late summer season. When growing plants require water, give them sufficient to thoroughly moisten the roots, so that each root may be able to do its share in supporting the plant. A little weak liquid manure once a week will help plants in hanging baskets or window boxes to continue flowering and growing until late in the season. Unless this is done the soil becomes poor from constant waterings, and the plants begin to look poor and shabby.

In giving fertilizers to plants it is always wise to start by giving them a small quantity until the plants show signs of increased growth and vitality, taking care to diminish the quantity if the plants begin to show too much growth. A sappy, abnormal growth in plants is not conducive to either good returns of blossom, or to the health of the plants for any length of time.

Plants of old geraniums in pots that are wanted for winter blooming and that have been resting since spring, can be cut well

back if the growth of the plant requires it. As soon as the young growth begins to appear, shake nearly all the earth from the roots, and re-pot into a size or perhaps two sizes smaller pot. Three parts of enriched sandy loam potting soil, and one part of sharp sand, will be a good compost to start the plants in, using an inch of drainage in the pots. Young plants of geraniums if grown as recommended in a recent number of this journal will however give much better flowering results than old plants, unless the latter are very nice plants

and in extra good shape for growing on again.

A few pots of freesias may be started toward the end of the month for early flowering. Stand the pots outside in a cool place. Do not over water them until they show signs of growth. Five or six bulbs will fill a four or five inch pot nicely. The bulbs for later flowering must be kept dry until potted later on. Freesias are one of the most satisfactory bulbs for winter flowering in the window that we have, as well as in the greenhouse.

Amaryllis bulbs, plants of clivias, and cactus require very little water now.

Calla lilies that have been resting can be repotted if necessary. Oftentimes a top-dressing of well enriched potting soil will be sufficient for these plants without repotting them. To top-dress plants—as it is termed, get a sharp pointed stick and take out some of the top soil around the plant without disturbing the roots very much, then fill in with the fresh rich soil. This is often better than repotting callas, as overpotting them produces an abundance of growth, and few and late blooms. The drainage of the plant

must be perfect or the plants must be repotted instead of top-dressed.

Tuberous and summer flowering begonias like partial shade and plenty of water at the roots. A position well sheltered from winds is necessary to get the best results from summer flowering begonias.

FLOWER GARDEN.—Give growing plants plenty of water. Water them in the evening if possible, if not water them as early in the morning as you can.

But water them at any time rather than allow them to wilt. If watered when the sun is on them avoid damping the foliage as much as possible.

Pick flowers required for the house early in the morning. Put them into water as quickly as possible. Flowers that have once been allowed to wilt, may apparently recover all their former freshness, but the wilting process lessens the vitality of the flowers and shortens their period of usefulness and their beauty for decorative purposes.

Pick out the finest blossoms and mark them, if you wish to save seed from any particular plants. All the rest of the seed heads of either plants or flowering shrubs, should be removed as soon as they are out of flower, as the formation and ripening of the seed saps the strength of the plant, and prevents or lessens considerably, future flowering results. Many flowering shrubs, such as lilacs, syringas, deutzias and spireas produce seed very readily unless the seed heads are pinched off.

Picking the flowers thoroughly and regularly from sweet peas will lengthen their flowering period considerably.

Dahlias must be given plenty of water and



FIG. 2407. JUNE FLOWERS.

syringed occasionally. A little liquid manure will help them from now on until flowering. Cut off all weak useless shoots leaving only strong vigorous growth for flowering. Put stakes to dahlias early, or they are liable to be broken off and spoiled for the season.

VEGETABLE GARDEN.—Plant out Savoy and winter cabbage and late cauliflower as soon as possible. A row or two of beans and beet-roots can be sown, these will come in useful quite late, if the season is favorable.

A few hills of sweet corn may be planted, these will give returns if autumn frosts are not too early and severe.

Plant out celery as soon as possible, shade and water the plants until well established.

White turnips may be sown on ground where potatoes have been dug from, or where peas have been grown.

A sowing of viroflay spinach toward the end of July, will if the weather is favorable give good returns in the autumn, when fresh green vegetables are scarce.

Stir the soil amongst growing crops continually, water them thoroughly when required, late in the evening.

W. HUNT.

Hamilton.

TIMELY TOPICS FOR THE AMATEUR—XVII.

WEED-KILLING ON LAWNS IN SUMMER.

THE dry, burning hot weather that is usually experienced during July and August, taxes very heavily the assiduity and energy of those who endeavor to keep the lawn looking fresh and green at this season of the year. In spite of repeated and copious waterings, the spring and early summer freshness and rich coloring of the grass cannot be retained, unless under exceptionally favorable conditions, such as a naturally moist, rich sub-soil; or perhaps the greater part of the lawn may have the benefit of partial shade during the hottest part of the day, in addition to an abundant supply of water for irrigation purposes. Even with these favorable surroundings it is difficult to have the grass in good condition as might be desired, and prevent the intrusion of deep-rooted, and other noxious weeds. These latter will, if not kept under by persistent care and attention, soon overgrow and eventually destroy altogether the grass and clover, the legitimate occupants of the grass plot. Coarse growing weeds, such as dandelions, plantain, docks, yarrow, etc., are very difficult to eradicate when once they are allowed to establish themselves on the lawn. On lawns where for reasons, such as a scarcity of water, or perhaps imperfect under-drainage, the sod becomes thin and of weak growth, weeds of all kinds are sure to appear.

A word or two on some of the methods and implements that are in use for eradicating weeds from lawns may perhaps be acceptable to readers of the journal at this season of the year, as too often the weeds are neglected from the fact that weeding is not at all a pleasant occupation, more especially that of weeding lawns.

No better implement can be found for

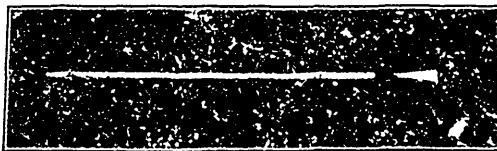


FIG. 2108. WEED SPUD.

deep rooted weeds than what is known as the weed-spud. (See Fig. 2108). This cut represents the style of weed-spud that is commonly sold in hardware and other stores, but I consider it could be much improved upon by adding a T shaped handle at the top, or by the addition of a round knob at the end instead of being straight as represented in the cut. This addition to the handle would allow of its being used effectually by ladies or children on hard, dry soil, without injury to the hands, which is often the case when only a straight handle is used.

Many readers of the journal will doubtless recognise in this weed-spud an implement that has been in common use for years not only amongst horticulturists but also amongst agriculturists in the old lands, more especially in the south and west of England. On every well managed farm in the districts mentioned, is kept a supply of these weed destroyers, not only for the use of the workmen, but the farmer himself usually carries a weed-spud with him on his daily tours of inspection. Scarcely a thistle, dock, or burdock is allowed to escape a deep down amputation of its roots with this sharp chisel-like implement, thus effectually checking, and in most cases destroying altogether the roots of these weeds. This weed-destroyer is certainly a great improvement on the short handled garden knife for rooting out weeds. The use of the last mentioned



FIG. 2109. LAWN RAKE.

implement meaning at least a severe back-ache, or perhaps still worse an attack of rheumatism, by those who perhaps kneel or sit on the damp ground so as to effectually root out these weed pests. It is only recently that the weed-spud has been brought prominently to the notice of our horticulturists, but no one who has a lawn or garden should be without one of these useful implements.

The lawn rake is another useful implement to use on grass plots. This rake, as represented in the cut (Fig. 2109), is a lighter rake than the cumbersome daisy rake, so well known to old country gardeners; but it is equally as efficacious as the heavier daisy-rake in the removal of seed heads of weeds, and also shallow rooted weeds such as yarrow, sorrel, moss, etc., that infest most lawns.

A good combing down of the grass with this rake early in the spring time before grass cutting is commenced, will also effectually remove the greater part of the partially decayed growth of the previous season, as well as removing many unwelcome intruders in the shape of weeds, making the grass cutting much easier than it otherwise would be.

It often happens also at this season of the year, especially where there is very little water for irrigation purposes, that the grass requires very little cutting, but not so the weeds. Many of the latter, more especially the close growing plantains, etc., seem to grow and flourish with even greater vigor during a period of drought than at other times, throw up their seed-heads in great abundance. Even if the lawn-mower is

brought into use at this time, most of the seed or flower-heads of these plants are only bent down, and are not injured in the least by the mower passing over them. Not so with the daisy-rake, as this effectually nips off and gathers up the flower-heads, so that they can be burned, to prevent them from seeding.

Possibly many readers of the journal have already in active use on their lawns, the two weed killing implements I have mentioned, but if not I am satisfied they will be well pleased if they invest in the purchase of one or both of these weed exterminators. Stooping or kneeling about on lawns, and digging out the weeds mentioned is both tedious and laborious, but with the use of the weed-spud and lawn-rake it is not at all an unpleasant pastime. Many lawns have doubtless become thick with weeds, because of the tedious and unpleasant labor associated with weeding them with a knife. The weed-spud and lawn-rake overcome this difficulty to a great extent, making the process of weed killing much less irksome and objectionable, than it otherwise would be without them.

A new style of lawn mower has recently been introduced, having for one of its main objects the destruction of flower and seed

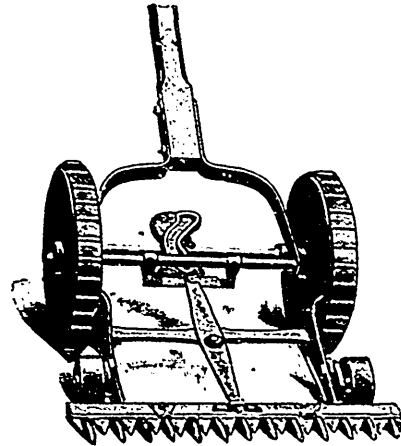


FIG. 2110. LAWN MOWER.

heads of weeds as well as cutting the grass. The accompanying cut of this machine is taken from the American Florist of date February 9th, 1901. From the appearance of this machine as represented in the cut, it is built, so far as the knives are concerned, on the same principle as the grass and grain mowers used on farms. Apparently it would be necessary to rake up the grass after cutting, especially if the latter had attained very much growth. It will doubtless prove to be a useful machine for cutting down flower and seed-heads of weeds, particularly on large lawns or in parks. It is manufactured by the Clipper Lawn Mower Co., Morristown, Pa., and from its appearance as represented should prove a useful factor in keeping down coarse growing weeds on lawns.

I am not in favor of using acids or other chemicals to exterminate deep rooted weeds, as the careless or immoderate use of chemicals would probably do more harm than good, in most cases. A constant and vigorous campaign during the summer against these intruders on the lawn with the weed-

spud, supplemented by the use of the lawn-rake, will in a short time rid the lawn of weeds, if at all carefully done.

Another important point in the well-doing and nice appearance of lawns—especially after the weeding process—is the matter of mulching and nourishing the grass, so as to induce a close and vigorous growth, the latter being an essential feature not only for appearances, but also to prevent coarse weeds from gaining a place on the lawn. Few of these coarse weeds are very much trouble to eradicate from a close growing, well nourished sod. But oftentimes the application of an unsuitable or badly prepared mulch only serves to intensify and increase the evil it is intended to avert, by introducing innumerable weed seeds, etc., that if allowed to grow will perhaps be found more objectionable than those that have been removed by the weed-spud and lawn-rake.

Probably in the August number of this journal I may write a few lines on the preparation of a mulching suitable for renovating lawns.

Hamilton.

W. HUNT.

BERBERIS THUNBERGI FOR ITS FOLIAGE IN AUTUMN.

NO more brilliant autumn feature among deciduous shrubs is to be found than a mass of the barberry, whose leaves before they drop change in tint to a rich fiery red that quite glows in the sunshine, while it possesses one great advantage over many shrubs remarkable for the brightness of their decaying leaves, for when at their best most of them quickly become bare, whereas those of the barberry are retained for some time. Taken altogether it is a very desirable shrub, for though of somewhat dense growth and usually assuming the character of a spreading bush about three feet high, yet its growth is very graceful. Next, the leaves when partially unfolded,

forming as they then do little rosettes of tender green along the shoots, are particularly pleasing and directly after this the flowers appear. They hang down in considerable numbers from the undersides of the branches and in color are sulphur yellow inside and brownish on the exterior. As a rule it does not berry freely, yet sometimes the berries are borne in quantity. When such is the case they form quite an additional feature, as the oblong shaped berries, though rather small, are of a bright sealing-wax red and frequently remain attached to the plant throughout the greater part of the winter, thus rendering the specimen an object of beauty long after the leaves have fallen.

The barberry, which is also known by the specific name of *Sinensis*, was introduced about a century ago, but it is only within the last twenty years that its merits have been generally recognized. Like most de-

ciduous barberries this will hold its own in dry sandy soil and seen in a mass or clump it is most brilliant, and in this way it appeals more strongly to one than isolated examples.—*The Garden, London.*

CHIONODOXA.



FIG. 2111. CHIONODOXA.

This spring a little group of chionodoxas were so early in bloom, and so very showy, growing along the foundation wall, along the east side of the house, that we determined to have a photograph, and Miss Brodie has well succeeded in showing it at its best.

The name is from two Greek words meaning Snow and Glory, and the common name Glory of the Snow has therefor an ancient origin. The plants are natives of Crete and Asia Minor, and are closely allied to *Scilla*, which, with the Snow Drops are all companions in early bloom. They were introduced into cultivation 1847 and have since been widely cultivated.

Prof. Bailey in his *Encyclopedia of Horti-*

culture says "Chionodoxas thrive in any fertile soil, well drained and not too heavy and in any exposure, the main requisite for growth being that they have a light and an adequate supply of moisture while growing and until the foliage is ripened. The bulbs should be planted about three inches deep, and closely, say an inch or two apart. Lift and replant about the third year. They need no winter covering. They flower well in pots in winter, in a cool house temperature. They must be forced only gently and given abundance of air, light and moisture. They are increased by offsets and seeds, which they produce freely. Under favorable conditions, they increase rapidly by self sown seed.



The Canadian Horticulturist

COPY for journal should reach the editor as early in the month as possible, never later than the 15th. SUBSCRIPTION PRICE, \$1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

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

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

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

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

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

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

NOTES AND COMMENTS.

YORK IMPERIAL.—Judge Wellhouse, of Kansas, has 200 acres of York Imperial apples, and finds them handsome and better flavor than Ben Davis, but would not entirely discard the latter for them.

NEW PEACHES.—Bull. 137, Mich., gives the following notes:

Arctic—Slow to bear, and quite unproductive; medium size, greenish yellow, dry of flesh, poor quality.

Crosby—Not so hardy as claimed, and inclined to be small in size.

Crothers—Originated on farm of Mr. Crothers, Kansas, medium to large white peach, with red cheek, and has borne abundantly at station; ripens just before Gold Drop.

Gold Drop—Hardy and productive to a fault. When severely thinned, one of the most profitable late market kinds; last of September.

Sneed—Originated by J. L. T. Sneed, of Tennessee, six days earlier than the Alexander; aside from its earliness it has little to recommend it.

PEARS FOR EXPORT.—That the Ontario pear crop will be a large one seems well assured, and the disposal of it to good advantage will not be easy unless our foreign markets are accessible. Preparations are being made by the Department of Agriculture at Toronto which no doubt will make this possible whenever enough pear growers can be induced to unite and make up a certain quantity each week, and fill the compartment.

Already it is high time for those intending to export their pears to provide boxes and packing material, and be prepared for the busy season. The box used by those of us who have been experimenting in the export

of pears, is of the following dimensions: 22 x 11 x 5½, which takes from 60 to 80 pears, according to the grade. We prefer to have these boxes open on the broad side, the whole of the cover to be removable, and thus expose to the buyer the whole contents. Usually a box taking two layers deep is best, and all the fruit in a box should be of uniform size.

Grade A No. 1, measuring over 2½ inches in cross section, sometimes sells in Glasgow at from 7 to 10 shillings each, a most respectable figure, which if procurable by even a company of growers in each pear centre, would soon cause a stir, and bring about a rapid development of the industry.

The great trouble is that we have not quantity enough of any variety in any one section; our growers have planted too many varieties, and in this there is little or no profit.

We need to plant acres of our finest variety, and then we would soon find ourselves in favor in the great European markets.

GEORGIAN PEACHES are beginning to be shipped north (June 29th).

THE NEWTON PIPPIN APPLE is yielding well this year in Watsonville, California, the yield being estimated at 500 carloads, and buyers are already offering 67½ cents a box for 4-tier No. 1 apples in car lots.

THE NEW APPLE BARREL authorized by the Dominion for use in 1902 is smaller than that adopted by the American apple shippers. Their's has a head diameter of 17½ inches, staves 28½ inches long, and a bilge 96.4 inches outside measurement. Our barrel 26¼ inches between heads, a head diameter of 17 inches, and a middle diameter of 18½ inches, and is intended for apples, pears and quinces.

CHERRIES WANTED IN NEW YORK CITY.—We have a letter from A. L. Causse Mfg.

Co., 105 Hodson St., New York, asking for large daily consignments of sour cherries which they want for curing in sugar. A good hint for helping the keeping qualities of the fruit is given, viz., to expose the fruit packed in baskets, or in such packages as would allow the air to go through, to vapors of sulphur. "This," they write "is done greatly in France, where cherries before shipping are put in a closed room, in the centre of which a half pound or so of sulphur is ignited and allowed to burn. Cherries thus treated will keep a good while without decay. You may refer to Dunn's agency as to our credit."

Too bad that no one in our province has enough sour cherries to meet this good opportunity for a ready sale.

CURRANTS.—To get the best results from currants they should be planted in good, deep, rich soil in a cool location. Plant six feet apart each way. Keep the soil well worked until they commence to bear, and then the soil should never be worked till the fruit is gathered. Mulch around each bush with straw to keep down weeds. Remove the straw after the fruit has been gathered. and work the soil well, but shallow, and manure every third year, and the other years give a dressing of wood ashes. Trimming consists both in black and red varieties, in keeping a well balanced crop, thinning out each year all the young shoots from the bottom to about four or five of the strongest, and after the bushes are four years old then cut out an equal number of the oldest canes each season. In this way they will continue productive for twenty years, and under favorable conditions much longer. Currants are very hardy and easy to start from cuttings. Every garden should contain currant bushes enough to supply the family with jelly and jam for the season at least. The enemies of the currant are few, the only one of consequence being the currant worm,

which hatches about the middle of May to the first of June, and eats the leaves all off if left alone. A sprinkling with hellebore, either in solution or dusted on dry, will soon rid the bushes of them. As to the best varieties, I would recommend for black, Lee's Prolific, and for red, Fay's Prolific. Lee's Prolific is enormously productive, the fruit

is large and of a superior quality, and the bush is a vigorous grower, making it very profitable. Fay's Prolific is the largest red currant yet introduced, being the greatest for size and productiveness combined.—*W. Warnock before the Goderich Horticultural Society.*

QUESTION DRAWER.

The Currant Plant Louse.

1228. SIR,—I enclose you leaves of white and red currants. Kindly let me know what is the matter with them.

Durham.

JAMES A. BROWN.

The currant leaves sent by Mr. J. A. Brown of Durham, are attacked by the currant plant louse (*Aphis ribis*) some of which are on the leaves you sent. Although rendering the bushes for a time unsightly these insects seldom injure the bushes to an appreciable extent. Spraying the foliage from beneath with whale-oil soap solution or kerosene emulsion will destroy the aphid, but it is well to look first and see if there be not enough Lady-bird beetles or Syrphus fly larvæ destroying the plant-lice to render any treatment unnecessary.

Entomologist,

J. FLETCHER.

Central Exper'l Farm, Ottawa.

A Small Greenhouse.

1229. SIR,—Would you kindly tell me if it would answer to have a small greenhouse attached to a dwelling house heated by a hot air furnace, or whether the heating must be by hot water, and if the latter what the difference in cost would be?

Port Dover,

E. P. B.

Reply by Prof. Hutt, O.A.C., Guelph :

A small greenhouse attached to the dwelling house could as easily be heated by means of a hot-air furnace as by the hot-water system unless too far from the source of heating. The hot-air system, if it could be worked, would certainly be much cheaper

than the hot water, as the expensive piping would not be necessary. The difference in cost, however, would depend upon the size of the greenhouse.

A Rose Insect.

1230. SIR,—A few days ago I observed many tips of rose bushes in my garden drooping and withered, and, on examination, I found a maggot, over a quarter of an inch long, had eaten the pith out of the tip for about an inch or two, working downward from the point. What is this and how can the depredation be prevented?

Hespeler, Ont.

H. J. BROWNLEE.

The grub which is boring into the canes of the rose bushes of Mr. Brownlee is the larva of a beetle, whose name I am unable to give at present. Mr. Brownlee very kindly sent me some specimens of infected canes, from which several grubs were taken. It is pretty certain that the best remedy is to cut off and burn all infected twigs, for in this way the life-history of the insect is abruptly terminated and the succeeding stages cut off.

W. LOCHHEAD.

House Ear Chickweed.

1231. SIR,—I enclose herewith a specimen lot of a weed which is destroying lawns in this locality, and would be pleased to know its true name, etc., and how to best get rid of it. It is of such a creeping, low nature that a lawn mower has no effect on it.

Chatham Ont

GEO. MASSEY.

Reply by Dr. Jas. Fletcher, Central Experimental Farm, Ottawa :

The weed sent by Mr. Massey from Cha-

tham is the Mouse-Ear Chickweed (*Cerastium vulgatum*). This is a creeping perennial plant which is sometimes troublesome on lawns. It generally first appears in patches, which gradually increase in size, until sometimes lawns are quite ruined and require to be ploughed up and laid down afresh. When not too abundant on a lawn, the treatment which has given me the greatest satisfaction is to give the patch frequent and heavy rakings, and then sow on them a mixture of Kentucky blue grass and white clover, using the seed in the proportion of two bushels of the former and four ounces of the latter to the acre.

Lemon Trees Not Flowering.

1232. SIR.—I have a lemon tree about ten years of age and it has never bloomed. I am told that, as it is a seedling, it will not produce blossoms unless it is grafted from another that has flowered. As I am unable to procure grafts here, I thought you could probably tell me where I could get some, and the cost.

Oakville, Ont.

Mrs. A. D. CHISHOLM.

Reply by Dr. James Fletcher, Central Experimental Farm, Ottawa :

In reply to Mrs. Chisholm's enquiry, the lemon like all other cultivated fruits is improved by hybridising, and all new varieties come from seeds, so it is plain that her plant being a seedling is not the reason it does not flower. It is just possible of course that if a graft were obtained from a mature tree that it might flower sooner than otherwise. I am inclined to think that a different treatment, such as the curtailing of plant food and pot room, might have the effect

of producing flowers. In the limited experience I have had in growing these plants in conservatories and greenhouses I have noticed that the lemon is a shyer bloomer than some few species of orange which I have grown here. Grafts of a mature lemon tree could be procured at the proper time from most of the large florists or from correspondents in California or Florida.

Small Greenhouse.

1233. SIR.—Please tell me would it answer to have a small greenhouse attached to a dwelling heated with a hot air furnace, or if it is necessary to have hot water heating. If the latter, what would be the difference in expense?

Small greenhouses attached to dwellings may be heated from a hot-air furnace, but the plants, for the most part, will not do as well when hot water is used, and care will be needed to keep down the red spider.

The expense of hot water heating plants is about double that of a hot air furnace, but, after they are installed, they will be much more satisfactory, as they are more economical of fuel and give a pleasanter heat, which is more evenly distributed.

Where one has a hot air furnace in their residence and is to build a small conservatory, say not over 15 by 20 feet, it will answer, in case a hot water coil cannot be placed in the furnace, to place a register in the greenhouse and run a pipe to the furnace, but for larger houses an independent hot water plant is advisable, unless the heating system in the dwelling is changed to hot water.

I. R. TOFT.

Questions Answered.

How to Get Rid of Ants.

I have been asked to give through the Horticulturist my methods of getting rid of ants. I will give two methods. One that I have practiced for years is:—First disturb the hill, then place immediately over it a

dish, box or large flower pot. In about two days come along with a kettle of boiling water, lift up your dish and you will find the ants have nested on the surface of the ground immediately under it when they can be easily scalded. If the ant hill is

close to the root of a plant, disturb as before then place the dish a few inches from the plant; the ants will follow the dish and nest under it when they can be scalded without injury to the plant. One thing to be careful about is never raise the dish to see what the ants are doing till you are ready with the hot water or they will take warning and the next time you look for them they will have retreated under the surface.

Another method is:—Catch a toad, place

it under a dish, box or flower pot over the ant hill. Leave it there for three or four days, according to the number of ants and the capacity of the toad. When you raise the dish you will find the toad waiting to be moved to fresh feeding grounds with not an ant in sight. This is the simplest and surest method of getting rid of ants I ever tried. Sometimes it is necessary to place a stone on the dish or box to keep it down solid.

Mitchell.

T. H. RACE.

Open Letters.

Deciduous Shrubs.

SIR,—In an article in the May number of your journal, a list of hardy shrubs is given as a guide to those who would buy something reliable for their grounds.

I would say that the list contains some that are not hardy here at Port Huron. If they fail here I fear that they would do so over a large portion of your country.

Of the Deutzias, *Pride of Rochester* fails entirely; *Crenata*, leaves subject to rust; *Crenata, flore pleno*, a little better but fails to winter sometimes; *Gracilis* is not reliable; *Scabra* stands the winter the best of family.

Only few of the *Altheas* are sure to go through the winter. I lost all of my light colors last year. The red was injured only a little.

Spiraea Prunifolia kills a little. Several varieties of *Spiraea* are tender.

Tamarix can not be depended on.

Negilia Candida is tender, so is the *Smoke tree*. None of these are any more hardy than the peach. Where that kills, these are liable to kill. I make this statement hoping it may help some.

Port Huron, Mich.

L. B. RICE.

Bind Weed.

SIR,—I noticed the question on the 253 page of the June number of the *Canadian Horticulturist*, respecting vine weed or bind weed.

Six years ago I had wild morning glories among my raspberry bushes, in one part of my garden. These I got rid of by careful weeding and digging, without removing the bushes.

Later, however, I discovered another plant, or weed, very much resembling the wild morning glory, which I think must be the one known as bind weed. At first it was confined to one square yard in a flower bed. I fought it for a couple of years with ordinary weeding and digging, but I found, instead of being destroyed, it had spread over about a square rod, even making its way

under the hard beaten paths, and reappearing in the soft soil beyond.

In the fall of 1890, I dug the whole patch, and picked out with my fingers, every root I could find, no matter how small. The next spring, however, it appeared again, here and there over the patch. During the summer of 1900, I continued the fight. Wherever I found the weed, I dug around it carefully, often tracing the root down into the hard subsoil, two feet below the surface, and still it was going downwards. When I had taken out the root to that depth, I poured into the hole from half a cupful to a cupful of coal oil, and filled up the hole.

This summer, so far, I have not seen one of the weeds in my garden, and I am hopeful I have exterminated them.

Hespeler, Ont.

H. J. BROWNLEE.

Fruit for the Pan-American.

SIR,—For the past few weeks we have been able to place on the tables of the Ontario Fruit Exhibit, a very nice collection of apples in the fresh state, and a variety of fruits in glass. Our display so far has been very much admired by the large number of visitors attending from day to day.

As the season for the various small fruits is now here it is very desirable that as large a number as possible of our fruit-growers and shippers, should be interested in the project of sending over samples of the very best fruit to be obtained, in order to maintain the high standing as a fruit producing country, which we at present occupy.

I will be extremely pleased if you will write me at your earliest convenience as to what fruits you are likely to have, and as to whether you may be able from time to time, to send me a few fine specimens of fruit from your neighborhood.

You may rely that no effort will be spared in order that all exhibits sent forward may be brought prominently before the Jury of Awards from time to time, so that every exhibitor may receive full recognition when the awards are finally made.

The awards will be made on a basis of merit independent of any other exhibit and will not be competitive as at ordinary fairs, so that any person sending in fruits may expect to receive such recognition as their exhibit may warrant.

We have made arrangements to pay the transportation charges on all fruit sent in, and will be glad to forward you shipping tags and labels as you may require.

W. H. BUNTING, Supt.

Buffalo, N. Y., June 20th, 1901.

Paradise Stock Hardy.

SIR—Replying to query No. 1215, in your issue for May, I beg to state that the root of the Paradise apple (used as a dwarfing stock) is apparently more hardy than that of the common apple.

In the spring of 1898 I planted five trees of the Bismark apple, budded on Paradise stock. During the following winter, February 1899, occurred the "big freeze" when all apple trees in nursery and many in orchards throughout the central west were root killed, yet the Paradise roots were uninjured. The Bismark trees were planted in clay soil in an exposed situation. The roots were not protected by banking or mulch and there was no snow on the ground when the freeze came.

The aforesaid trees have not yet shown any tendency to fruit, and in this respect do not sustain the claim of the introducers.

M. J. GRAHAM.

Fruit Reports from Algoma.

DEAR SIR,—Yours of the 22nd inst. received, you will no doubt have my report before this, that is, the blanks you sent.

More particularly in answer to yours of the 22nd, I may say that we have a full crop of apples, more especially winter varieties, which were only fair last year. Wealthy, our well tried stand-by, is doing as well as ever, we have got nothing equal to it yet up to the end of February.

Small fruits, a full crop. Strawberries, especially, an enormous crop with Clyde to head the list; first picking on the 15th of June.

The behaviour of young fruit trees this spring has rather upset my previous ideas as regards hardiness, but as none of us like to have our pet theories upset I have come to the conclusion that the variety had little to do with our losses.

Last fall was very peculiar in Algoma, excessive rains with warm weather kept young trees growing right up into winter. On the 7th of November snow fell and never left the ground until the beginning of April; this was a full month earlier than usual for winter to come on, and most of the young trees were growing and had not formed their terminal buds, leaves were frozen on the tops and were hanging thus in spring. I notice that those that matured their wood early came through all right. The chances are we may not have such another fall in 20 years. Among those which suffered most are Sweet Bough, Blenheim Orange, Stark, Red Astracan, Red Buttinghausen. Among pears, Idaho and Kieffer, the last was growing two inches a week when winter came on. Flemish

Beauty came through best. Among plums all have done well. America was frozen back but not killed. Some of the Japans were a sight to see this spring, covered with bloom, only a few fruits set. Cherries have all done well and show some fruit. English Morellos, especially Ostheim, will have to take a second place. It is perfectly hardy but is a dwarf and a shy bearer.

I am, yours truly,

Richard's Landing.

CHAS. YOUNG.

Spring Notes From St. Lawrence Experiment Fruit Station.

SIR,—The first half of May has been moderately warm with frequent showers. Grain seeding progressed rapidly from April 27 to May 8th. Since that time the ground has been so wet and rain has been so continuous that very little seeding has been done. Many farmers in the county that have low lying farms have not been able to sow any grain, and at this date (June 3rd) some fields are covered with water. Corn and potatoe planting will be very late, if done at all, in some cases only light sandy or well-drained fields will be fit for cultivating within the next 10 days. Grass is growing rapidly and prospects are bright for a good hay crop. Cattle have been out on pasture since May 6th.

Of the different varieties of fruit in the Experimental Station all came through the winter in good condition and there are no losses except the Japan plum Kelsey.

Blossom buds some of the European varieties of plums perished and some of the Japanese.

Cherries in bloom, Ostheim, Vladimir, E. Morella, Montmorency, Early Richmond.

Buds injured, Reine Hortensa, May Duke.

Plums in bloom, Shippers' Pride, Yellow Egg, Genii, Wolf Wyant, Forest Rose, Forest Garden, Hammer, Chas. Downing, Rockford, Whitaker, Col. Wilder, Milton, Weaver, Gold, Mana, Ogon.

Buds injured, Lombard, Grand Duke, Tatge, Hughes' seedling, Moore's Arctic Saunders, Blood, Normands, Abundance, Berkman's.

Pears in bloom, Clapp's Favorite, Dempsey, Petite Marguerite, Keiffer, Bessemianka, Beurre Clarigeau (top graft).

Apples in bloom, Chanango Strawberry, Longfield, Ontario, Salome, Peter, Hurlbut, Yellow Transparent, Milwaukee, "Downing's Winter Maiden's Blush," Alexander, Shackelford, Polousa, Brockville Beauty, Excelsior, McIntosh Red, Fameuse, Canada Red, Baxter, Belleflower, Scarlet Pippin, Wealthy Duchess, Talman Sweet, G. Russett, Ribston Pippin.

Trees were in blossom about eight days earlier than in 1900 and we have had no frost to injure the blossoms.

Fruit is set fairly well and apples in this section will be a good average crop, say 60 to 75 per cent. of a full crop.

Fameuse is the principal variety. Late winters do not cut much figure in the market, but give promise of a 50 per cent. crop. Insects have not multiplied very rapidly and foliage has a fine healthy appearance. Spraying has been neglected

in many instances and the fruit may suffer in consequence later on if spjt develops rapidly.

HAROLD JONES.

Maitland, Ont., June 3rd, 1901.

A Remedy for Weeds in Walk.

A correspondent writes that he has used Gillett's lye for destroying weeds and grass that grow up in gravel walks and through slats, with success. He says:

"A fairly strong solution should be made and poured carefully between the slats, and in a day or two all the unsightly grass and weeds will have disappeared. I find that by applying a very small quantity of the solution to the roots of dandelions, that it instantly destroys them, and as the root is killed, there will be no further growth. For latter purpose the solution can be applied with a small sprayer or a large oil-can. By adopting the same method in the treatment of other weeds, a similar result can be obtained.

The Tent Caterpillar.

SIR,—This section of Ontario is a present receiving the attention of the Tent Caterpillar to such an extent that even that proverbial wise man "the oldest inhabitant" has never seen anything like it. A trip through the country in any direction in South Waterloo, and North Bruce, shows that the orchards in many localities are literally laden with these pests. All along the road sides, also where the wild cherry and plum trees grow, the same condition exists and the fruit trees are being rapidly denuded of their leaves. The same state of affairs would have prevailed in Paris, but our local Horticultural Society set a man to work to destroy the caterpillars on the wild fruit trees which grow so plentifully on our streets, and this

example has had a good effect, as many of the town people are heartily seconding the effort. Still many are careless and the prospect is that not only their own fruit trees will be permanently injured, but their neighbors are certain to suffer also.

The Town Council, at our request, has also set men to work and large numbers of useless trees are growing on the public streets. But the difficulty is now with the careless and indifferent people who are permitting the pests to mature, and in some parts of the town the caterpillars are to be met with on the sidewalks, crawling on the fences and into the houses, until the more thoughtful and careful people are wondering where the business is going to end. There can be but one result, the destruction of all fruit trees where the caterpillars are allowed to increase and multiply.


Can you inform me what power a municipal Council has in this matter, and whether a By-law cannot be passed which will give the necessary power to the police to punish people who permit such a nuisance to continue on their premises?

Paris, Ont.

JOHN ALLAN,
President, Paris Hort. Soc.

There is a *Noxious Insect Act*, recently passed by the Ontario Legislature, which provides that at the option of a municipal Council, its provisions may be applicable, and the Lieutenant Governor in Council, on the recommendation of the Minister of Agriculture, may make such regulations for the prevention and destruction of insects injurious to trees, shrubs and other plants, as may be deemed advisable.

OUR FRUIT CROP REPORT.

 THE apple crop generally, as will be seen from the table of reports given herewith, is a comparative failure in Ontario. The same is true of the apple crop in New York, and indeed in most of the Eastern States. This would indicate a better price for our apples, unless the reports should prove true of a heavy apple crop in the West.

The pear crop is pretty good, especially Bartlett's, although in some quarters even these are a thin crop.

Peaches are also good, though considerably thinned by curl leaf.

Cherries are a very poor crop. Gov. Woods are now ripening, but are very much blighted; the Tartarian will give about a half crop, while the Dukes, Morellos and Kentesh are all a comparative failure.

The California cherry crop is reported to be a failure also, so that cherries should bring an excellent price in our markets.

The Hudson River crop of sweet cherries is reported good, but the sour varieties are not heavily loaded.

The following table shows the conditions of the fruit crop in various parts of Ontario:

ONTARIO FRUIT CROP.

	Apples.	Black-berries.	Cherries.	Currants.	Goose-berries.	Grapes.	Peaches.	Pears.	Plums.	Rasp-berries.	Straw-berries.	REMARKS.
LINCOLN Co.—												
A. M. Smith, St. Catharines.	Fair to poor.	Fair.	Poor.	Fair.	Fair.	Fair.	Fair.	Fair.	Good.	Fair.	Very g'd	Plums stung by curculio.
WENTWORTH Co.—												
M. Pettit, Winona.	Poor.	Good.	Fair	Good.	Good.	Very g'd	Fair.	Very g'd	Good.	Good.	Very g'd	Pears badly affected with fungus.
W. M. Orr, Fruikand.	Poor.		Good.			Good.	Pair.	Very g'd	Very g'd			
VICTORIA Co.—												
Thos. Beall, Lindsay.	Fair			Fair.	Very good.	Poor.		Good.	Good.	Very g'd		
Essex Co.—												
A. McNeill, Walkerville	Good.		Good.	Good.	Very good.	Very good.	Good.	Good.	Good.	Fair to good.	Very g'd	
ORILLIA—												
C. L. Stephens.	Good.		Poor.	Fair to v. good.	Extra good.	Good.		Good.	Good.	Fair.		
ONTARIO Co.—												
Elmer Liek, Oshawa.	Poor.				Good.	Good.		Good.	Very g'd	Good.	Very g'd	
R. L. Huggard, Whitby	Fair to good.	Very good.	Fair to good.	Fair to good.	Good.	Good.	Poor.	Good.	Very g'd	Good.	Very g'd	Apple crop almost a complete failure.
GEORGIAN BAY DIST.—												
J. G. Mitchell, Clarksburg.	Fair.		Fair.	Good.	Good.			Fair to good.	Fair.	Good.		
OTTAWA—												
R. B. Whyte.	Good to poor.		None.	Good.	Good.	Good.		Good.	Very poor.	Fair to good.	Good.	Cuthbert and Golden Queen raspberries winter killed.
NIAGARA DIST.—												
E. Morden, Niagara Falls South.	Poor.	Good.	Good.	Good.	Fair.	Good.	Good.	Fair to good.	Good.	Good.	Good.	
OXFORD—												
J. S. Scarff, Woodstock.	Poor.		Fair.	Good.	Good.	Good.	Good.	Good.	Fair.	Good.	Very g'd	Plums dropping and decaying badly.
PARKTII—												
T. H. Race, Mitchell.	Fair to good.	Good.	Good.	Good.	Good.	Good.		Good.	Very g'd	Good.	Very g'd	
GRENVILLE—												
W. Jones Maitland.	Good.	Good.	Poor.	Good.	Good.	Good.		Poor.	Very g'd	Good.	Very g'd	
ESSEX Co.—												
W. W. Hilborn, Leamington.	Poor.		Fair.	Good.	Good.	Good.	Good.	Poor.	Very g'd	Poor.		Raspberries much injured last winter.
ALGOMA—												
Chas. Young, Richard's Landing.	Good.		Fair.	Good.	Good.			Fair.	Fair.	Good.	Very g'd	Fungus beginning to show on pears and apples, and fruit is dropping badly.
HURON Co.—												
A. W. Peart, Freeman.	Poor.	Fair.	Fair.	Fair to good.	Good.	Fair to good.	Poor	Fair.	Fair to good.	Fair.	Fair.	
Grey Co.—												
J. Graham, Vandeleur.	Fair.		Very g'd				Fair.		Very g'd	Good.	Very g'd	
HASTINGS Co.—												
W. H. Dempsey, Trenton	Poor.		Very Good.				Fair.	Fair.	Very Good.	Fair.	Fair.	Scarce any caterpillars, but plenty of aphids and curculio.
SIMCOE Co.—												
G. C. Gaston, Craighurst.	Very Good.		Very Good.					Very Good.	Very Good.	Cuthbr't winter killed.		