



The Canadian horticulturist & beekeeper.

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THE
CANADIAN HORTICULTURIST &
BEEKEEPER

PETERBORO, ONT.
APRIL, 1914

VOLUME 37. No 4
\$1.00 A YEAR



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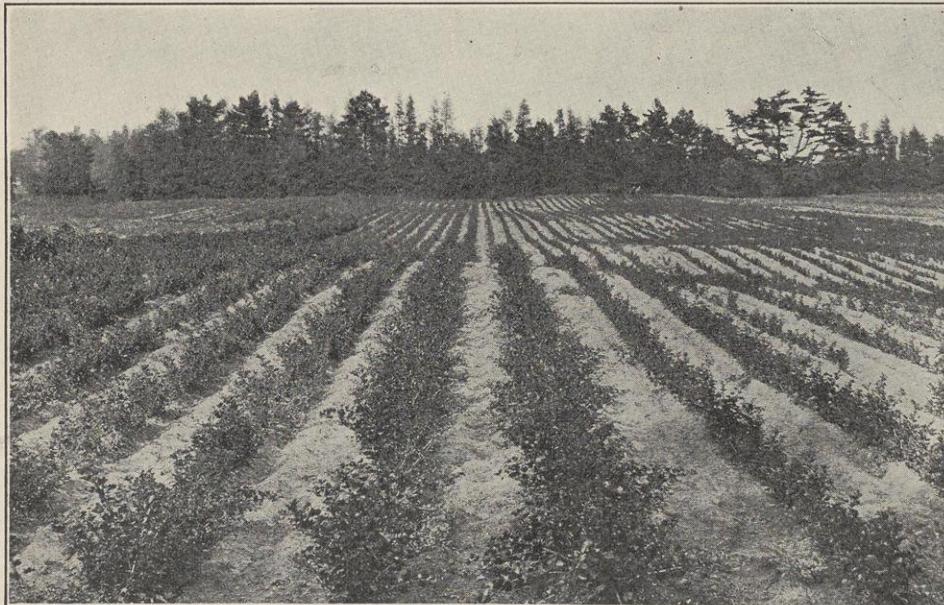
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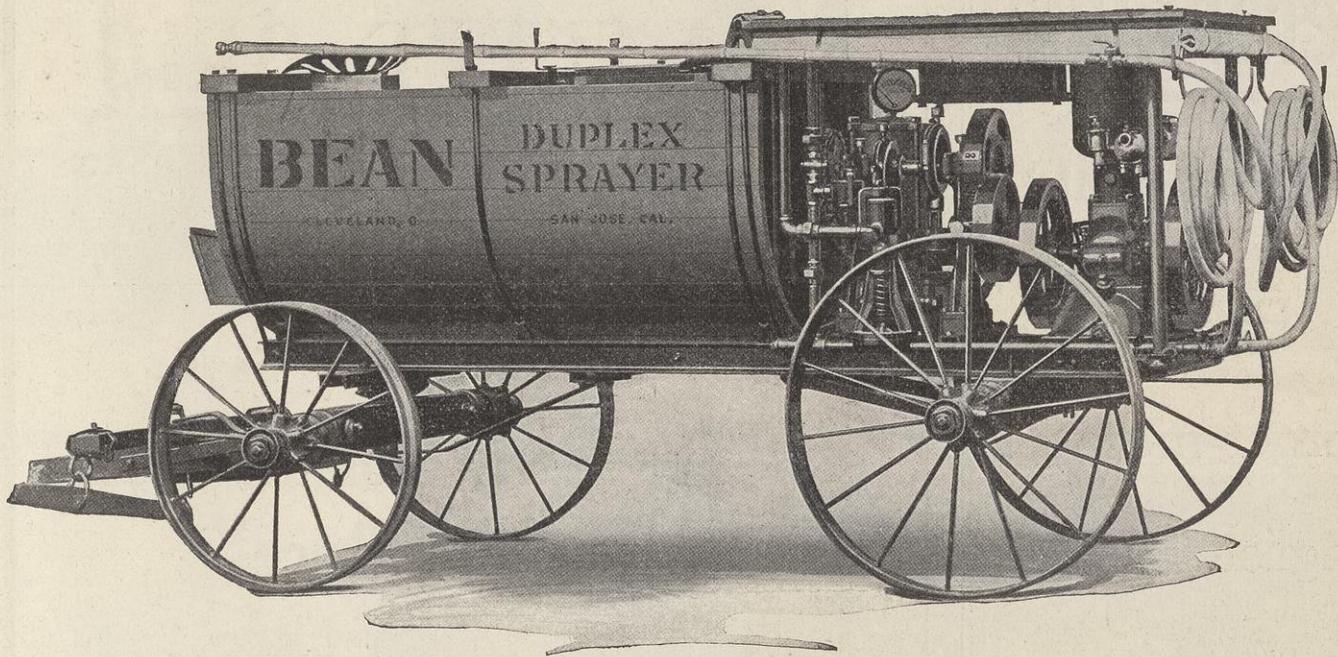
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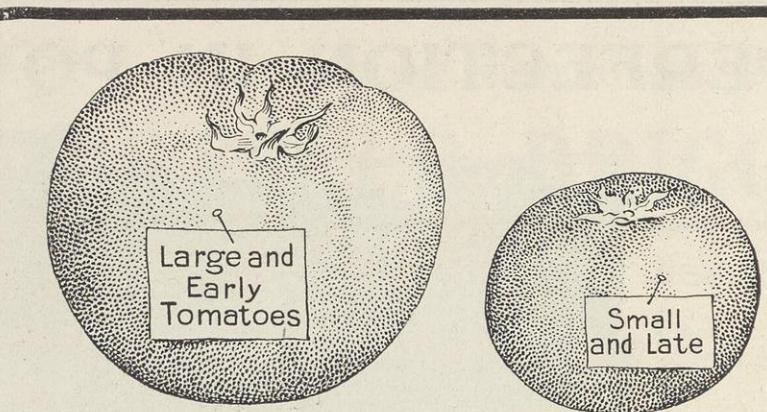
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I find from experience that soil fertilized with manure produces a large growth of vine, and while the vines may be loaded the fruit is undeveloped and ripens late, if at all. On the other hand where Harab No. 12 has been used, I find the vine development moderate, while the fruit is more plentiful, larger and ripens earlier.

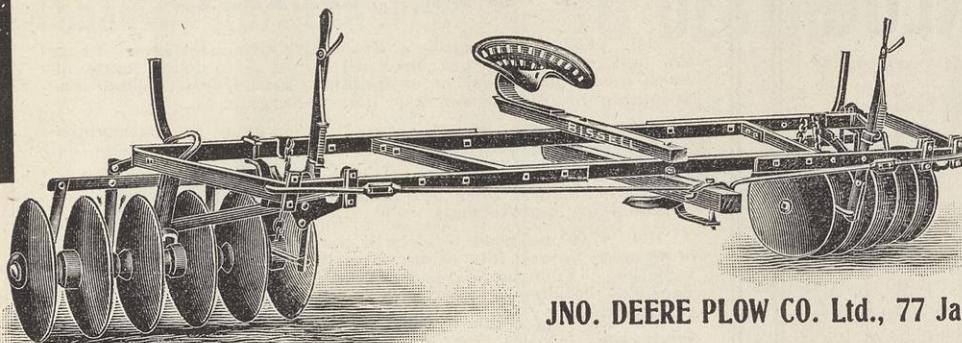
Using the proper fertilizers means the early ripening of your tomatoes—and other vegetables—and the fat price for you. There are 14 different Harab Fertilizers, each one the best for its particular purpose. The Harris Abattoir have published a guide book, showing the correct fertilizers for all kinds of vegetables, fruits, field crops, berries, flowers and lawns. I strongly advise you to write for a copy.



*Yours for the fat price,
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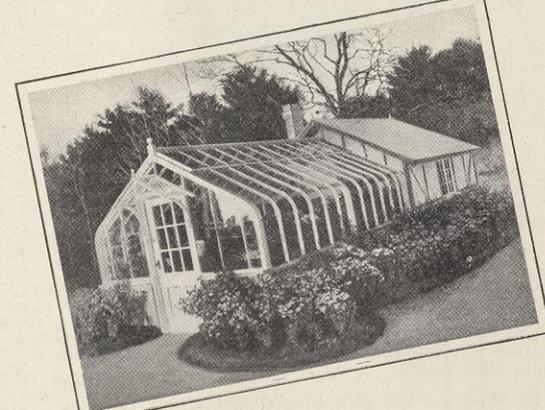
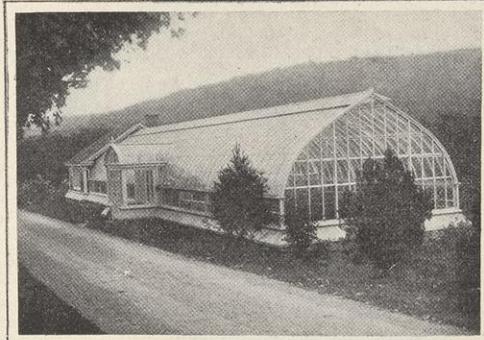


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You would be surprised to know how many are only 33 feet long and 12 wide. The one 50 feet long divided in two compartments is the greatest seller of them all.

We first had to do the little things well, before we could attempt the big ones.

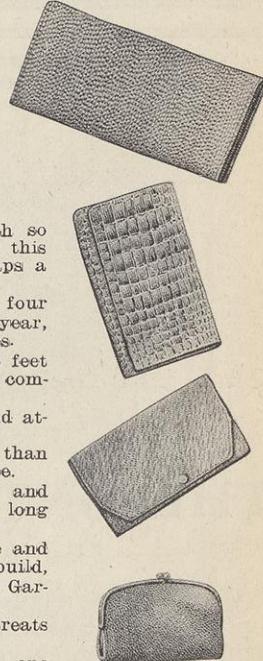
Big as we now are, we are doing the little things better than ever. Our customers are getting more real personal service.

Our houses, because of their improved construction and equipment, more nearly approach the ideal conditions so long sought for in glass enclosed gardens.

To the better appreciate just what we mean by service and to get a broader understanding of the range of houses we build, we suggest your sending for our Two P's Booklet—or Glass Gardens, A Peep Into Their Delights.

It's just a little plain clothes, chattily told tale that treats of a surprising number of things in a brief way.

The illustrations are many. Should you prefer to see one of us and talk the question over, we will gladly, at your suggestion, make an appointment to call.



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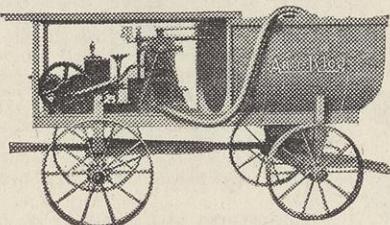
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They give the highest efficiency through long hard terms of service. There is an **ANTI-KLOG** of the right capacity for those who have much and those who have little spraying to do.

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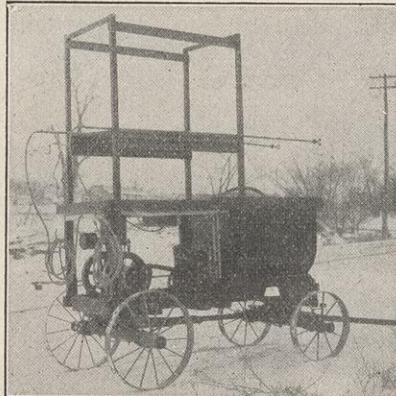
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 And mourned because you found it not;
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Saves its Cost in 30 to 60 Days

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Yet, YOU no ask us about this machine? Ven it will tie more vegetables than your whole family together once.

TIES ANYTHING, even to the most delicate vegetables. Bunching time is close and your order must be filed soon if you get one this season.

Write at once. Positively guaranteed.

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BLISSFIELD, MICHIGAN

**The
Canadian Horticulturist**
Regular Edition
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TO DESTROY APHIS, THrips, ETC.

Without Injury to Foliage

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Sulphate of Nicotine

"Black Leaf 40" is highly recommended by experiment stations and spraying experts throughout the entire United States, also by Canadian experts.

Owing to the large dilution, neither foliage nor fruit is stained.

"Black Leaf 40" is perfectly soluble in water; no clogging of nozzles.

PACKING:

In tins containing 10 lbs. each, 2 lbs. each, and $\frac{1}{2}$ lb. each.

A 10-lb. tin makes 1,500 to 2,000 gallons for Pear Thrips, with addition of 3 per cent. distillate oil emulsion; or about 1,000 gallons for Green Aphid, Pear Psylla, Hop Louse, etc., or about 800 gallons for Black Aphid and Woolly Aphid—with addition of 3 or 4 pounds of any good laundry soap to each 100 gallons of water. The smaller tins are diluted in relatively the same proportions as are the 10-lb. tins.

PRICES: In the United States, our prices for the respective sizes are as follows:

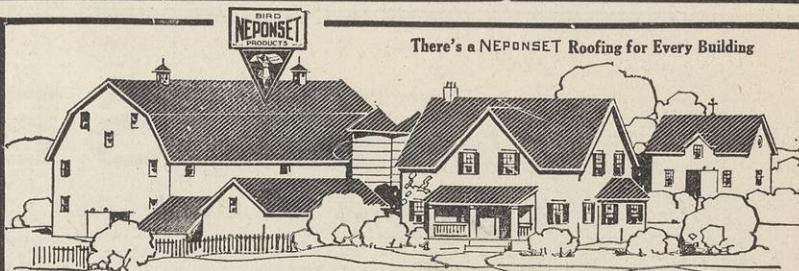
10-lb. tin, \$12.50; 2-lb. tin, \$3.00; $\frac{1}{2}$ -lb. tin, 85c.

IN CANADA, Dealers usually charge about 25% to 30% over the above prices because of the Canadian duty, etc. Consult your dealer about this.

THE KENTUCKY TOBACCO PRODUCT CO.

(Incorporated)

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HERE'S one thing about roofings you ought to know—a "slowly made" roofing is the only kind that is slow to wear out.

Every foot of NEPONSET Roofing is made, not on the how fast but on the "how-good-can-it-be-made" principle. This takes time. But it's the only way to surely make a roofing absolutely reliable and 100% weather and waterproof. You buy roofing for an investment. But a half-made, "hurry-up" roofing is the worst kind of an investment. You pay almost as much. What do you get? A quick-spoiling roof—a roof that's only half a roof—a roof that is a constant nuisance and source of expense. NEPONSET Roofing is slowly made—to give a service of years—not merely to sell.

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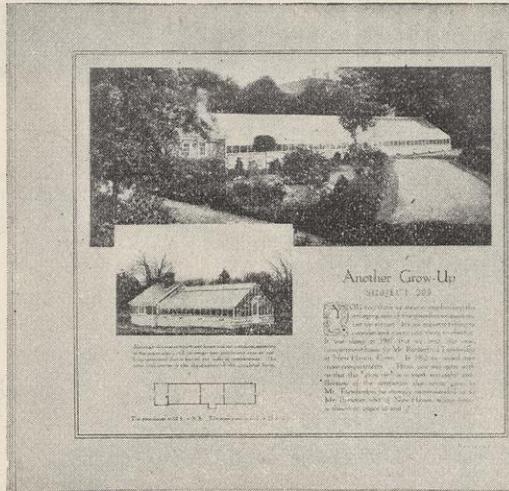
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NEPONSET PAROID ROOFING

Other Neponset Roofings are—Neponset Shingles for residences; Neponset Proslate, the colored roofing.

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Also makers of Neponset Wall Board, used in place of laths and plaster, and Neponset Waterproof Building Paper.



Send for this Unusual Greenhouse Catalog

JUST from the glimpse you get of these two pages, you can see how charming the general treatment must be, and how complete is the showing of each subject considered.

One thing that we think is decidedly in its favor, is that by far the greater number of subjects shown, are of modest size—say, from 33 feet long up to 100 feet. There are just enough of the larger subjects to give you an idea of the scope of our work.

The text is free from any technical description, and reads along just like you and I would chat about it, if we were comfortably seated together talking things over.

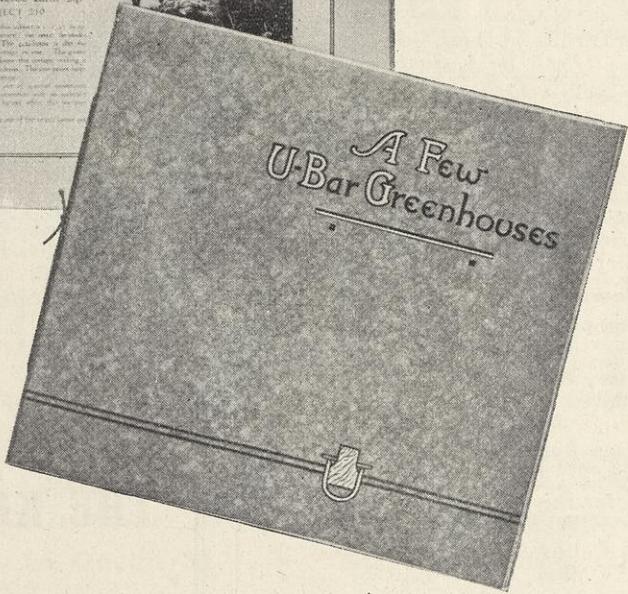
If you are interested in having a greenhouse, or adding to the one you already have, you are welcome to this catalog.

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PIERSON U-BAR CO

ONE MADISON AVE. NEW YORK

CANADIAN OFFICE, 10 PHILLIPS PLACE, MONTREAL



ROSES

THAT BLOOM ALL SUMMER

Hybrid Tea, the best varieties.

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All the Leading Varieties.

Big full sized bushes.

PERENNIALS

100,000 to choose from.

Summer Flowering Bulbs.

Catalogue on application

J. GAMMAGE & SONS, LTD.

LONDON, ONT.

The Canadian Horticulturist

Vol. XXXVII

APRIL, 1914

No. 4

What Spray Mixtures Shall We Use?

Prof. L. Caesar, Provincial Entomologist, Guelph, Ont.

I HAVE been asked several times what spray mixtures I should recommend for fruit trees this coming season. The following in my opinion are the best:

For the dormant spray lime-sulphur, either commercial or home-made. If there is San Jose Scale in the orchard the commercial should not be used weaker than about one gallon diluted to eight, or a specific gravity reading on the hydrometer of 1.032 to 1.035. Weaker solutions often fail to give good results. If there is no scale, either Oyster Shell or San Jose, the wash may be diluted one gallon to eleven or twelve. On peaches this should be applied early before the buds have any more than begun to swell, but on apples or pears it may be applied any time, say from two or three weeks before the buds burst right up to the time they are bursting. On plums and cherries it is better postponed until a few days before the buds burst.

For the second application on apples and pears, which should be just before the blossoms begin to open,—the earliest varieties being sprayed first,—either lime-sulphur of the specific gravity strength of 1.010 or 1.009, which is equivalent to the commercial diluted not more than about one gallon to thirty, or bordeaux mixture four-four-forty, should be used as the fungicide, the latter being given the preference. To each forty gallons of either of these mixtures two or three pounds of paste arsenate of lead should be added as a poison.

To prevent apple scab this application should be done very thoroughly and as near the time advocated as possible. Many tend to overlook the importance of this spraying but after such a bad season for scab as we had last year, the greatest care should be taken this season.

The second application for plums and cherries should be in about a week after the blossoms have fallen or as soon as the fruit is well set. The same mixtures should be used as for apples but in the case of Japanese plums and possibly sweet cherries the lime-sulphur should be a little weaker.

If peaches receive a second application paste arsenate of lead alone, two or three pounds to forty gallons of water should be used when the fruits are formed, and about one-third of an inch in size. The object of this spray is to destroy the plum curculio in the peach.

The third application for apples and

pears should be, especially in the case of apples, as soon as from eighty to ninety per cent. of the blossoms have fallen, beginning with the earliest varieties. By this time the bees will have almost abandoned the trees and gone to other flowers. For this application it is not advisable to use bordeaux mixture for these fruits as it often causes russetting, instead I prefer lime-sulphur of the strength of about 1.008 specific gravity, which is equivalent to one gallon of the commercial diluted to from thirty-five to forty gallons. To every forty gallons of this diluted mixture two pounds of the paste arsenate of lead should be used. More than this is not necessary but does no harm. This is the great application for codling moth and apple scab, and the trees cannot be too thoroughly and promptly sprayed.

For cherries and plums the third application should be about two weeks after the second and the same fixtures as for the second may be used.

If the weather in about ten days after the third application is cold, dark and wet it will be absolutely necessary to

give a fourth application for apples and pears with the same mixtures as for the third, otherwise there will be an attack of apple scab, especially in varieties like Snow and McIntosh. If the weather, however, is dry and warm there is no need for this application except in the far eastern part of the province where it should always be given.

Cherries should receive a fourth application with the above mixture or bordeaux as soon as the fruit is off to prevent leaf spot. Plums that are inclined to rot should be sprayed as late as possible without danger of staining the fruit for market, either lime-sulphur or bordeaux being used. Peaches may receive an application of the so-called self-boiled lime-sulphur about one month after the blossoms fall to ward off brown rot. For method of making this see Spray Calendar or Bulletin 198.

Towards the end of August or in early September cold, wet weather sometimes requires an extra application to keep off late attacks of scab and sooty fungus on apples. I should use the same mixtures as for the third application.



A Power Sprayer Possessing Useful Features

This spraymotor stops and starts up automatically by means of the pressure. No safety valve is required. The pump only pumps up the pressure when it stops itself.

In the foregoing it will be noticed that I have not included the new spray, Soluble Sulphur, or the powder forms of arsenate of lead. I think that Soluble Sulphur will prove satisfactory against San Jose Scale; it gave me good results on this pest last year, but even for this it would be better to test it further before strongly recommending it. As a summer wash I should advise every grower to be very careful in using it with arsenate of lead as a substitute for lime-sulphur and arsenate of lead. There were not many cases of burning last year from its use but I am not at all sure that under different weather conditions it may not cause serious injury. Therefore, my advice would be to use it only in an experimental way. I doubt very much whether it will prove to be nearly so safe as lime-sulphur or bordeaux mixture. It is a soda sulphur compound, not a lime-sulphur. Further study by chemists as to the reactions that take place when arsenate of lead is added to it may help us to supplement the knowledge we shall soon have obtained as to its safety and efficiency. I do not find that this wash

will kill aphids as claimed by many of its advocates.

As for the powdered forms of arsenate of lead, some experiments in the laboratory tend to show that it will be necessary to test these considerably before recommending them as a substitute for the paste form. The claim that they stay up in suspension much better than the paste form did not seem to be justified either when mixed alone in water or with lime-sulphur. Moreover the sticking qualities were seen to be not quite so good as those of the paste forms, though different makes differ in these respects. The particles are not quite so fine as in the paste. The greater convenience, however, in using, shipping and storing justifies their being used on a small scale by fruit growers.

In conclusion, I should mention that for grapes and potatoes bordeaux mixture should always be used instead of lime-sulphur. For potato beetles most men will get better results from paris green than arsenate of lead. Use from one to two pounds to every forty gallons of bordeaux.

take. Starved trees usually produce poor crops of small size fruit.

Select land with elevation for air drainage. Dead or stagnating air is as sure to foster diseases of trees and fruits as of human beings or live stock. Low lands cannot produce fruits of highest color, free from fungous injury. Actual elevation above sea level is not nearly as important as relative elevation, above immediate surroundings.

Plant the orchard in soil with good water drainage. A tree cannot thrive with wet feet any more than can a man. Wet soil means poor growth, diseased trees, and small, pale, insipid fruit. If your orchard has been planted in wet soil, nothing will pay better in the production of fruit of quality and quantity than to drain it well.

Plant good varieties, and top-work the older trees of poor varieties if they are vigorous enough. In an orchard there will be no figs from thistles, and no Rome Beauty or Stayman Winesap from Smith Cider or Ben Davis.

In any region plant only those varieties that do best there. It would be a mistake to reduce the quality of the ensuing product by planting the Spy in the Albemarle region, or the Rome Beauty in the Snow region, however excellent each of these may be when grown "at home."

Plant only healthy trees from reliable nurserymen, but pay no attention to the "old fogey" notion that hardy trees are to be obtained only from the north or young-bearing trees only from the south.

Plant at such distance between trees as to permit abundant growth without crowding, and also provide for the spreading of low broad tops, without that crowding and shading which must result in light-colored fungus-specked fruits.

Help to obtain color by so pruning as to grow low, open spreading tops. Top back old tall trees to spreading branches. Get sunshine and air to each fruit, if possible, to give color and flavor.

Obtain color by (a) growing in suitable soil, (b) at some elevation, (c) with potash and phosphoric acid fertilizers, (d) reducing the nitrogen so as to avoid too rank growth where greater color is wanted, (e) not cultivating too late in the season, and (f) not pushing too much leafy growth by severe dormant pruning, but (g) remove superfluous small growth by judicious midsummer pruning.

Strive for uniformity of color by adopting a definite, uniform system of pruning that will keep the tops open and spreading; avoid dense masses of foliage or such arrangement of branches as will close and become dense by weight of fruit; adopt a system of uniform feeding.

Better Fruits at Less Cost *

Prof. H. A. Surface, Pennsylvania

The two points involved in this topic are, first, the production of fruits of higher quality, and second, the reduction of the cost of production.

Before proceeding far upon a discussion of quality, we should establish a definite basis by defining this much abused word. Perhaps we should go farther back and explain what quality is not. Therefore, we are prepared to say that quality does not mean huge size. Compare a Jonathan apple with a Wolf River, for example. Neither does this word mean the production of giants within any one variety. Let it be remembered that the scoring rules of the American Pomological Society properly provide for the scoring down of specimens of any variety if they are over size, or above a fair standard.

Quality is not red color. Compare Ben Davis and Grimes. Neither is it fine appearance alone. Compare a western boxed apple of any variety with a roughly-handled eastern grown Northern Spy, Baldwin, McIntosh, Tompkins, King, Grimes, Jonathan, or Stayman Winesap. Neither is quality produced by boxing what should be put into a barrel. Neither is it to be found in naturally low grade or mediocre varieties.

Quality in fruits is an epitome of those desirable features embraced in pleasing flavor; fair, uniform size for a certain variety; good, uniform color for the variety; freedom from injury by insects, or

by fungous diseases, and the absence of artificial injury, such as bruises.

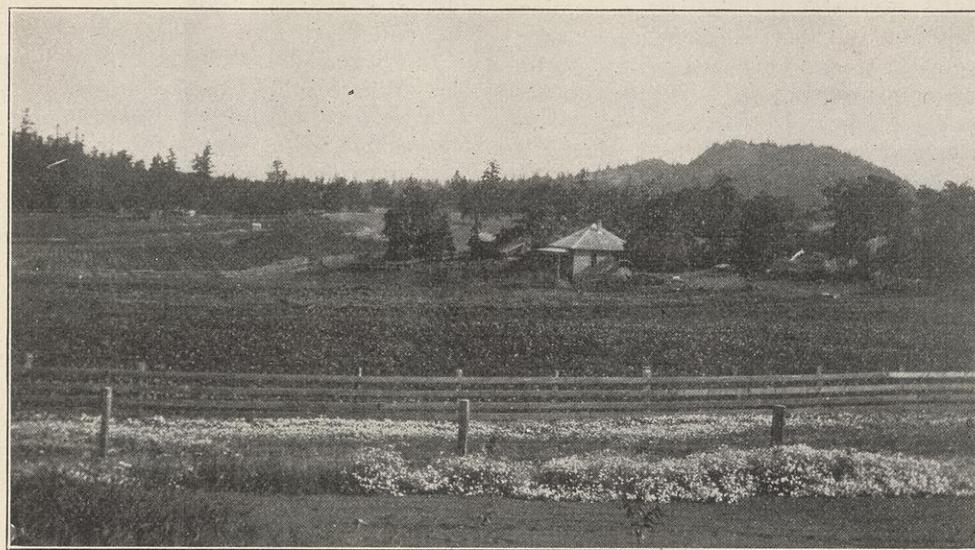
Now comes the very important question: "Will one-tenth of our fruits measure up to this standard?" and the more important reply, that the average of the crop for America does not. Why not? Because there are more persons growing fruit trees who absolutely neglect them, producing nothing but culls and seconds, than there are who attempt to care for them and produce a first-grade product. We have shown in the demonstration orchards of the Bureau of Zoology of the Pennsylvania Department of Agriculture, trees bearing apples ninety-eight per cent. free from worms, which but two years ago produced fruit ninety-five per cent. wormy. The difference is due chiefly to negligence on the one hand, and care on the other.

With all orchardists the greatest problems involve the questions of how to improve quality, and how to reduce cost. To such men we venture to speak from personal experience in our own orchards which are, we believe, the largest in the Keystone State, and which produced, this year, carloads of fancy fruits that sold at record prices.

ESSENTIALS TO SUCCESS

To produce fruit of better quality, first select "fruit soil." This must be deep, loose, and originally fertile. This produces good growth and large fruits. The "abandoned farm" proposition for successful fruit growing is generally a mis-

*Extract from an address delivered before the Niagara District Fruit Growers' Association.



Orchard of W. Palmer, near Victoria, B. C., in 1903

The trees are such mere whips as to be practically indistinguishable.

Where growth is liable to be too rank, and thus reduce color, as it usual on low or damp ground, or where dormant pruning has been too severe, manuring too heavy, or cultivation too long continued, better color for any one season may be obtained by summer pruning.

SECURE PROPER SIZE

Obtain size by those methods that give strong leaf and twig growth, and by thinning; but, in so doing, avoid producing that extreme rankness of growth which detracts from color of fruit. Do

this by (a) securing a fertile soil, (b) by retaining moisture by mulching or by cultivation and cover crops, (c) by replacing removed fertility and organic matter by commercial fertilizers, manure and cover crops, especially the legumes, (d) by stimulating growth when needed by dormant pruning, and (e) by thinning early and vigorously, and (f) by keeping the leaves healthy through spraying with proper insecticides and fungicides. Healthy leaves mean large, healthy, late fruit.

Pears and Pear Culture

A. W. Cook, O.A.C., Guelph, Ont.

If one were to listen to a fruit grower giving his experiences with twig or pear blight, the sad experiences that had spelled disaster, one would naturally be under the impression that there was not the least chance to make pear growing profitable. The writer remembers very clearly listening to such an experience. The grower said: "Why, do you know, the thing kills them in a night," and it does as far as their knowledge is concerned. The truth, however, is that pear blight can be controlled, and is being kept in check to-day. Those who contemplate growing pears should not start unless they do so with a thorough knowledge of this bacterial disease, and a strong determination to control it. If one does this, there is money to be made in pears.

The pear situation is taking on brighter prospects. In the past fifteen years pear growing has been a doubtful business for many an average grower, simply because of their neglect to give proper attention to the work. We do not hear of pear orchards being planted to such a large extent as some of the other fruits that are not nearly so popular with the consumer. This is on account of

there having been a very suspicious sentiment held against this industry because of a few negligent fruit growers. This condition is diminishing. Fruit growers have begun to awaken to the fact that there is money in pears when judicious care, systematic pruning and thinning, and the proper food elements are given to the producing tree.

The pear is a fruit that will grow in a

large geographical area. In Ontario there is hardly a section in the older portion of the province where the pear will not thrive. I cannot vouch for the ability of this fruit to withstand the severe low temperature of the northern parts.

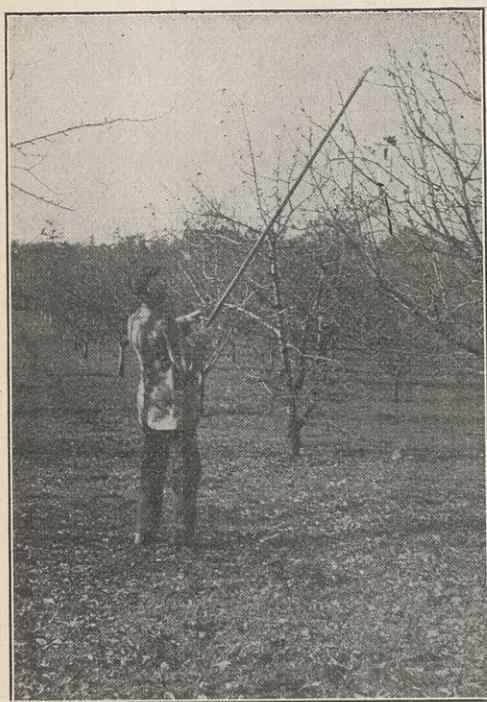
There is nothing to be gained by planting a large number of varieties of pears. The consumer should be encouraged to purchase nothing but the best, and the grower should strive to produce a high class article. There is a steadily growing demand for the very best, and it should be the ideal of every grower to produce this grade and place on sale this grade only. There is nothing to be gained by the man who tries to undersell a man who has a good uniform article, no matter what the competition may be. The best article will always command the very highest price, and sell first.

Plant just a few, well selected varieties, that are strong, hardy trees and which bear uniformly every year. The best to plant would include pears that would bear one after the other, so that all the crop would not have to be harvested at once. Among the varieties that are seemingly the best, judging from the experience of various growers, are such varieties as Bartlett, Kieffer, Anjou, Duchess, Bosc and Clapp's Favorite.

Like many other lines of agriculture, the pear should be chosen to suit the market, location, and the demand from outside sources. Some markets have very little use for certain varieties, while for export or canning purposes there is a steady demand for such varieties as the Kieffer. For the city trade there is some demand for an early fruit, which would naturally be the Clapp's Favorite. If one wants a good all-round pear that is a universal favorite with the purchasing public and a profit producer for the grower, there is nothing like the Bartlett. It has one strong characteristic that distin-



The Orchard of Mr. W. Palmer in 1913
Note the difference in ten years in the growth of the trees.



Pruning in Orchard of T. W. Palmer, Victoria, B.C.

guishes it from all other varieties, that is its adaptability to soils and location. Its demands for soil conditions are few compared with those of some of the other varieties. If one were to plant Bartletts as their chief crop, then Keiffer, Duchess, Anjou and the Bosc for winter fruit, they would have a good combination.

The pear is not very exacting as to soil conditions. There is, however, one very

important point in selecting a location. Choose a soil that will produce a slow-growing tree. This is a very essential factor in pear growing. Neglect to attend to it has often spelled disaster for pear growers. The pear tree should be a slow growing tree. The pear tree that grows rapidly is very tender. This condition is conducive to pear blight. On the other hand, the slow, sturdy growing tree often wards off attacks of this disease, and is sure to put up a stronger fight for existence.

The pruning of the tree is another essential factor in the successful pear business. The trees should be headed low, with an open centre. Some growers make it a practice to cut back each year's growth after the tree has come into the bearing stage of life. By following out this method they argue that they can obtain the fruit near the centre of the tree. One must remember that in all pruning operations, where severe pruning is practiced, it encourages strong wood growth. This naturally increases the amount of labor each year for the pruning of the orchard. Some of the varieties, such as the Anjou and the Bosc, are spreading in their natural growth. If they are planted closer than twenty-three feet they are apt to crowd, which will necessitate unnecessary pruning. The other varieties are more upright in their growth and consequently can be put close together. The distance of planting is governed by the nature of the soil and variety.

A Last Season's Test of Soluble Sulphur

J. G. Mitchell, Clarksburg, Ont.

SOME seven years ago I was induced to experiment with what at that time was considered a new spray, lime sulphur. As soon as I heard of this spray, I felt confident that it should soon do away with the troublesome bordeaux mixture. The professors at Guelph said that it was not safe to use as a summer spray, and practically forbade its use, but the splendid results obtained with lime sulphur over the old spray were so pronounced that the following season it was strongly recommended by growers and professors, and became the standard as a fungicide.

However, growers have been asking and hoping that some more convenient way of using the sulphur spray would be devised and we now have this in the latest form called "Soluble Sulphur." In my opinion it is just as much superior to lime sulphur solution as the latter is to the old bordeaux spray.

In the way of convenience there is no comparison. I always used to dread the loading and unloading of the heavy six hundred pound barrels of lime sulphur, and the men would nearly go on strike

when asked to handle it. Last year I got the spraying done for about half what it cost the previous year. I used two barrels of the lime sulphur solution and soluble sulphur for the rest of the spraying. As soon as we used the first hundred pounds of soluble sulphur, I could see there was no use asking the men to go back to the old spray. We had absolutely no trouble with nozzles clogging and never had a stoppage from the time we commenced using soluble sulphur.

Of course I insisted on the spray tank being cleaned out every night, all the water being strained, and a screen kept over the feed pipe to the pump. We filled the spray tank about half full of water, then put in our soluble sulphur, eight to ten pounds to forty gallons. This was well agitated by the time the tank was filled. We put this spray on just as the buds were bursting, in fact on some trees the blossoms were nearly open. In the summer spray we used from one to two pounds to forty gallons of water, putting the soluble sulphur in when the spray tank was half full of water, and

adding arsenate of lead last, two and a half pounds to forty gallons. Doing it in this way there is absolutely no trouble. Where aphis appeared in our orchards we used nearly two pounds of soluble sulphur to forty gallons for summer spray, and only about one pound in orchards where there was no aphis. Scab and fungi were controlled perfectly in all our orchards. I do not consider it necessary to use the mixture stronger than one and a half pounds to forty gallons, except for aphis.

Our McIntosh Red apples were absolutely clean and beautifully colored; ninety-nine apples out of every hundred went into number one boxes. The Greenings were just as nice, having a lovely bright glossy appearance. If these varieties come out in this way there is no need to worry about others. We also had good results in fighting aphis, having practically no loss from this pest, while in 1912, when we used lime sulphur, our loss was well up to two thousand dollars.

It is now a recognized fact that soluble sulphur is bound to take the place of the old material. It is just as efficient as a fungicide, if not better, than lime sulphur, and is so much more convenient that every grower should be made thoroughly acquainted with it.

Varieties of Currants and Gooseberries*

. Henry, B.S.A., Winona, Ont.

The best varieties of black currants are Naples, Champion, and Victoria. The Naples is a strong, upright, vigorous bush, healthy and very productive, and the berry is large, of good quality, and borne on short clusters. It is probably the most widely planted in Ontario.

The Champion is a very good variety. The bush does not become as large as the Naples, but it is productive and quite hardy. The fruit does not ripen uniformly, and is five days to a week later than the former variety. Victoria is vigorous and hardy, but from my experience is not as productive as Naples or Champion.

There are many varieties of red currants. A few of the best ones are Cherry, Fay, Prince Albert, Chataqua, Perfection, and Raby Castle. The Cherry is the principal red currant grown in southern Ontario for commercial purposes. The berry is large and the bunch short and compact, and the bush very productive.

Fay's Prolific has been widely advertised as superior to the Cherry, but is very similar in fruit and productiveness, the bunch being a little longer, but loose towards the base.

The bush of the Prince Albert is a

*Extract from an address delivered at the last annual convention of the Ontario Fruit Growers' Association.

poor grower while young, but becomes more vigorous and productive with age. The berry is medium in size and very acid.

Chataqua has the same fault as the Prince Albert, being a very slow grower when young, but very productive. The berry is large, light red, and the seeds are very large.

Perfection is a cross between White Grape and Fay's. The berry is very large, clusters are long and a beautiful bright red. Ripens with Fay's.

Raby Castle or Victoria is exceedingly productive, but is rather out of favor on account of its small size, larger currants having a preference on the market.

GOOSEBERRIES

People have been planting gooseberries extensively during the past few years, and at present prices they are profitable. Up to a few years ago the preference was for American varieties on account of their resistance to mildew, but recently, in the light of improved spraying methods, the English varieties have been largely planted. On the whole the latter sorts are much larger, but not of better quality.

There are innumerable varieties of English gooseberries, but only a few are grown commercially in Ontario, among the best being Industry, Lancashire Lad, Crown Bob, Keepsake, and Whitesmith. The Industry is a vigorous, upright grower and a heavy cropper. The berry is red when ripe, hairy, and has a pleasant, rich flavor. Lancashire Lad is not as strong a grower as Industry, nor as heavy a bearer. The berry is smooth and roundish-oblong, of medium size.

Crown Bob is another red berry favored by some, but we pulled ours all out, as they were poor growers and shed their leaves prematurely. The fruit is large, oblong, and hairy. The Keepsake is a large, straw-colored berry of excellent flavor, and can be pulled very early for green gooseberries. The Whitesmith, in my opinion, is the best of them all. It is very vigorous and an excellent bearer of large, oblong, smooth, greenish-white berries, the ribs of which are plainly marked.

There are practically only three American varieties that are worth planting commercially, namely, Pearl, Downing, and Smith's Improved. The Pearl is an exceedingly productive variety of good size and quality. It is as productive as Houghton, and larger than Downing. The Downing produces large, roundish, light green fruit which has distinct veins and a smooth skin. The bush is vigorous and productive. The Smith's Improved is a vigorous grower, and the berry is larger, oval, light green, and has a bloom. The flesh is moderately firm.

A Perennial Border at Small Cost

H.R.H., Que.

THE perennial border is a "thing of beauty" which is within the reach of every garden-maker, and yet, except in very large gardens tended by professional gardeners, very few successful ones are seen. Many amateurs shrink from undertaking a perennial bed for the same reasons which for many years caused me to confine my horticultural efforts to the cultivation of annuals, in spite of the fact that these require much more care and attention and reward one's best care but for a single season. These reasons are, firstly, the by no means trifling expense of establishing a well-filled bed of good perennial plants; and secondly, the mental vision of a semi-naked bit of garden forming an eyesore during the two or three years that must elapse before the plants grow to sufficient size to cover the ground and produce the abundance of bloom desired. As an amateur who has successfully overcome both these difficulties I should like to give others the benefit and encouragement of my experience.

Having decided that I would have a perennial border, and having likewise determined that the cost must not be great, I started operations in the fall, marking out my bed along the west side of my lot, a length of eighty feet, and making the bed eight feet wide. This area I had dug up and the soil thoroughly worked to a depth of three feet. A large load of well rotted manure was distributed over the surface and dug into the soil, then the bed was raked over

and made ready for the fall setting-in of plants. Spring planting, of course, is often practised.

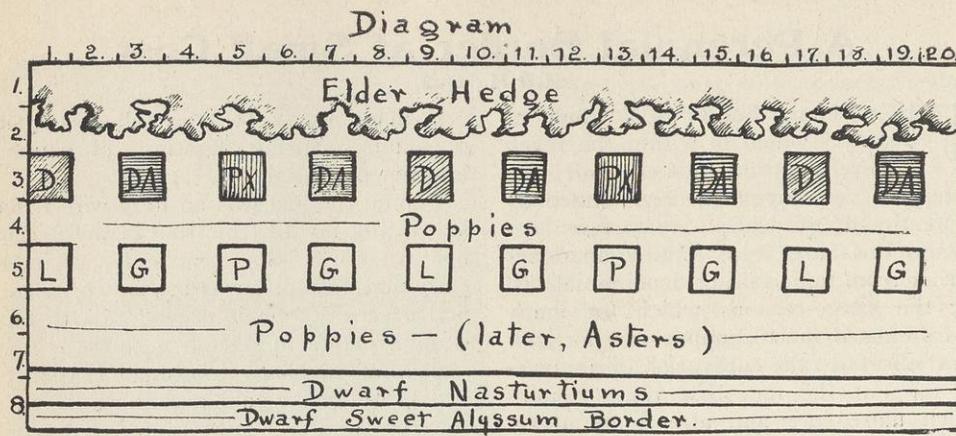
Behind the bed was an ugly wire fence separating my lot from that of my neighbor; to cover this completely, permanently and promptly was my first problem, and a serious one it proved, for to buy enough plants to set out a hedge eighty feet long involved too much expense, and the plants would take several years to grow to the height required to conceal the fence and form an adequate background for my border. After careful consideration I decided to plant a thick row of common elder which grows wild in large quantities in most parts of the country, and is extremely easy of cultivation. A man with a cart dug, hauled and planted, with my supervision and assistance, enough thrifty young bushes to line the entire fence; every single root grew and flourished, and, the following season, formed a complete screen of its own peculiarly effective, light green foliage, surmounted with white blossoms and later with clusters of red berries. The result has given me cause for much self-congratulation. By the time my background was established, the perennial roots and plants I had ordered from the seedsmen had arrived, and these were duly set out in their allotted positions, as shown in the diagram. The supply was modest, not to say meagre, considering the extent of the bed. It consisted of:

Ten large-sized delphinium roots, ten



A Veteran Amateur Gardener: Mr. J. G. Graham, St. Thomas, Ont.

Mr. Graham was awarded first prize last year for his vegetable garden, in a contest conducted by the St. Thomas Horticultural Society.



Quarter-Section of Border (20ft)

D = Delphineum
DA = Dahlia

P = Peony
PX = Phlox

L = Lily
G = Gladiolus.

paeonies, ten phloxes, ten lilies, twenty dahlias, and twenty gladiolus bulbs.

The gladioli and dahlias were saved for spring planting; the rest were planted immediately and, the fall work being now completed, I staked, labelled, and mulched the various plants in preparation for their winter rest.

Early in April the mulching was removed; every one of my plants had survived the winter and sent up fine strong shoots. I had the bed covered once more with a layer of good manure and dug it in thoroughly, being careful not to disturb the plants, after which I worked and pulverized the top soil and smoothed the surface ready for planting. The last week in April I put the gladioli bulbs and dahlia tubers into the ground and on the first of May I planted quantities of poppy seed, the pompon variety, just scattering it and raking it lightly into the ground, between and around the perennials and in a solid strip two feet wide in front of them. It was a risk planting poppies so early in this climate, but I had plenty of seed saved from my own garden the previous year and could replant if the frost cut down the first seedlings. Fortunately they were spared, and I consequently had poppies in bloom nearly a fortnight earlier than usual.

In front of the poppies I planted a single, perfectly straight row of dwarf nasturtiums, and at the edge of the bed as a border I set out plants of dwarf sweet alyssum. These latter I had planted early in March in the house and later transferred to the hotbed so that at the time of setting out they were already starting to bloom and kept right on without setback, making a solid white border from the middle of May until after the heavy fall frosts had killed every other flower in the garden.

By the middle of May, when the poppies were up, the bed was well covered with green; besides the alyssum, a few paeonies were in blossom, the delphin-

iums were sending up promising flower spikes and the border began to be attractive to the eye. It was quite contrary to all rules and to my better judgment to allow the paeonies and delphiniums to bloom the first year after setting out, but it was very gratifying to see something of what was coming, and served to encourage my efforts.

The real show began about the middle of June when the pompon poppies came into bloom, and for nearly three weeks they were one glorious profusion of beautiful peony-like flowers forming one of the most magnificent masses of color that I have ever seen, and that, too, at a time of the year which, in this part of the country, is an "off season" in the flower garden. Earlier we depend upon the paeonies, delphiniums, and spring-flowering bulbs for massed color effects; later we have phlox, asters, nasturtiums, dahlias and a wealth of other heavy bloomers, but in between are a couple of weeks when the poppies fill a felt want and are almost alone.

As soon as the glory of the poppy-bed began to show signs of departing, and the plants began to yellow at the base, although many were still in blossom, I ruthlessly rooted up every poppy plant, worked a little more fertilizer into the soil and set out in their place the asters which I had planted in the house early in March, cherished in the hotbed, and finally potted off and plunged into a cold frame to await their turn in the border. By this time, the first of July, the plants were already branching freely in preparation for the flowering season, and, receiving no setback from careful transplanting, they were soon in bloom, and gave abundance of beautiful flowers from mid-July till killed by severe frosts in the late fall. They were of the Ostrich Plume variety which, to my mind, are the most satisfactory where a long-continued, showy mass of bloom is desired—I have counted forty to sixty good flowers on a single plant.

In the meantime the dahlias, phlox, gladioli, and lilies grew and blossomed, making a very fair show indeed for the first year's planting, while the dwarf nasturtiums, according to their wont, almost obscured their own foliage completely with their wealth of blossom, throughout the entire season.

At no time from May to late October did my border fail to show abundant color. A study of the accompanying diagram will show how, by careful planning and taking into account the habit of growth of each variety the plants were placed quite close to one another without, in the least, interfering with one another above ground or crowding each other for root room. Of course, care should always be taken to see that taller-growing sorts be placed behind those of smaller growth so as not to obscure them, also that deep-rooted plants be alternated with those requiring little or shallow root room; finally one should plan to have plants flowering at the same season to harmonize in color so as not to "kill" one another. For that reason I have not yet ventured to introduce into my border the gorgeous oriental poppy which I have known to ruin many otherwise charming borders of more delicately tinted flowers.

SUCCESSION OF BLOOM

The following table will show the succession of bloom: Late May and June, delphiniums, paeonies, alyssum, poppies; July, nasturtiums, dahlias, alyssum, gladioli, asters; August, asters, alyssum, elder hedge, lilies, dahlias, nasturtiums; September and October, asters, alyssum, nasturtiums, dahlias, phlox.

Now to consider the cost of that eighty-foot bed: Two loads manure, five dollars; digging of ground in fall, two dollars fifty cents; hired help on elder hedge, two dollars; ten delphinium plants, one dollar twenty-five cents; ten phlox plants, one dollar fifty cents; ten peony plants, two dollars fifty cents; ten lilies, one dollar; twenty gladiolus bulbs, one dollar fifty cents; twenty dahlia tubers, three dollars fifty cents; seeds, one dollar; total, twenty-one dollars seventy-five cents.

Thus at the small initial cost of twenty-one dollars seventy-five cents (which could have been even more reduced had I been willing to wait a year or two and raised some of the plants from seed) I established an entirely satisfactory perennial bed eighty feet by eight feet, which made a splendid showing from the very first year of planting, and which has greatly increased in beauty and value during the two years that have passed since it was planted.

In the meantime, in a sheltered, sunny corner of the kitchen garden, I establish-

ed a little nursery, out of which I got more enjoyment to the square inch than from any other spot on the place. Here I raised rows upon rows of thrifty perennial plantlets, delphineums, shasta daisies, perennial chrysanthemums, Canterbury bells, gypsophila (baby's breath), foxgloves, and many others, which, as

they became large enough, I transplanted to the perennial bed, so that now, after three years, I have my border filled to overflowing, and could do away entirely with the annuals, although I still reserve a strip in front of the bed for the gorgeous, annual display of poppies, succeeded by an equally beautiful

display of asters, and I still outline the border with the staunch alyssum. The result every season is a bed which is the object of interest and admiration to every passerby, as well as the unfailing source of supply for cut flowers throughout the summer, and so a joy also even to my most distant friends.

Orchids: the Goddesses of the Flower Families

F. E. Buck, C.E.F., Ottawa, Ont.

ALD. J. A. ELLIS, M.L.A., of Ottawa, is one of the very few men in Canada who has grown orchids successfully. As an amateur who has grown them for many years he speaks appreciatively of the rewards they have given him.

On the occasion a short time ago of a visit to his home to see his plants, I asked him if he did not experience a good deal of pleasure in being able to grow the flowers of a millionaire on the income of an ordinary man. To this he replied that the flowers which could be grown with the very minimum of care and with a maximum of results, were orchids. He added, of course, that this is provided one does not attempt the high temperature section, or some of the expensive varieties which are often less beautiful than those of reasonable price.

"As a matter of fact," said Mr. Ellis, "I haven't spent a cent on orchids for the past five years. Some of the plants I have to-day are those I began with many years ago. Of course they have increased, as most orchids do, until to-day the increase of some has been perhaps fifty-fold."

Mr. Ellis took me into several rooms of the house where orchids were used for table decorations, and similar purposes, instead of palms or ferns. He remarked about one fine flowering plant that "it had been brought out of the greenhouse when it started to bloom three weeks ago, and was good for another month, when another one from the greenhouse would take its place." Varieties which flower in winter are his choice, because, as he says, "in the summer there are plenty of flowers in the garden which can be used as cut flowers in the house.

WHY ORCHIDS

Orchids are seldom grown. Most people think that they cannot be grown by the amateur, or that they are the flowers of the millionaire. Such opinions in some cases are well founded, although only in some cases. The experience of Mr. Ellis and others who have grown them, refute such an idea. Actually there is a strong case in favor of the orchid as a plant for home use, and especially for the winter season. The case is supported by the following facts:

First: Orchids require a minimum of care and attention.

Second: The expense of growing orchids is not prohibitive, and after one has started, less than that of other plants.

Third: As suitable house plants, wonderful in their beauty of coloring and charm of form, they are unsurpassed.

WHY EXPENSIVE

The varieties which the amateur should attempt to grow are not expensive, but rare varieties fetch sums which only a millionaire could dream of giving for them. Such varieties are bought on the same basis as curios are bought, to add to priceless collections. Some few years ago I was visiting a commercial establishment which has a fine collection of orchids, and in discussing prices with the manager I was told this: That a short time before his firm made a purchase of several hundred bulbs, paying, I think, on the average about a dollar apiece for them. In this collection were one or two rare plants. About the time they were in bloom another orchid specialist visited this collection and asked to be given a price on two of the rare plants. One

was quoted to him at seventy-five dollars, and the other, a very beautiful plant, at one hundred and fifty dollars. He bought them at these prices and a few months later the one hundred and fifty dollar plant was shown by him at a world-famed exhibition where it took the first prize, and was then sold to some admiring rich man for five hundred dollars. An incident like this explains high prices, but the amateur is not to be frightened by such incidents, and they should not keep him from trying his hand at a most interesting, even if sometimes a rich man's hobby.

There are three essentials to success in growing orchids. Should you be able to supply these essentials try a few orchids.

First: The greenhouse, or that part of it set aside for the orchids, must always be heated to a temperature ranging from 55 degrees F. to 70 degrees F. It would prove fatal to the plants if it fell below 45 degrees F. We shall see why, later.

Second: Proper ventilation must be provided. But it must be provided so



The Vine, Clematis Paniculata, Growing on the Residence of Mr. Herman Simmers, Toronto, Ont.

This is an easy growing, hardy, free flowering, fragrant climber. The vine on the verandah is a Clematis Virginiana, a rapid growing, very hardy, native variety of Clematis. It is not as nice a vine nor has it as fine foliage as the Paniculata.



Lady's Slipper or Showy Orchid

that the cold air of winter is warmed before it reaches the plants.

Third: A method of watering must be followed which is not too far removed from Nature's method of supplying water to these plants.

As one writer says, "common sense" is necessary for success in growing orchids. And what common sense does is to recognize that orchids are wonderful and "to be desired" plants, which can be grown quite easily if we provide for them a few simple conditions. In other words as Mr. Ellis says, we must appreciate the fact that the habitat from which they come is quite different to what it is in the case of most flowers.

TREAT ORCHIDS REASONABLY

Orchids come from damp, swampy places, where the air is humid, the temperature never cold, and the soil a particular type. They grow on dead trees and the like,—in many cases at least, and their roots never feed in ordinary soil. In practice we find that peat will answer as the best material in which they will thrive. With regard to water, they like it with the chill off, in fact they must have it so, they can't stand the cold bath. And then, if a nice warm balmy atmosphere is supplied they will blossom as if they felt all the better for the change. In fact they like to be tamed if they are not poorly treated, or "herded with the common herd of plants." They soon forget their native haunts, especially those varieties which have been reared under strange conditions. Many of the children of the older races, the hybrids, are most beautiful, in fact so beautiful that one feels like acknowledging that perhaps they are the very angels and goddesses of the flower world.

POINTS IN ORCHID CULTURE

Orchids need very little attention. Orchids are generally free from insects. Orchids need re-potting only about once in three years.

Orchids do not need to be trimmed up, or fussed over like other plants.

Orchids have healthy and fairly attractive leaves when not in bloom.

"Orchids," says Mr. Ellis, "are easier to grow than fuchsias, begonias or geraniums.

ESSENTIALS TO SUCCESS

A correct temperature; from fifty-five to seventy degrees in summer, and from forty-five to seventy-five degrees in winter.

Shade from the strong rays of the summer sun.

Abundant moisture, especially in summer, in winter, watering with tepid water twice or three times a week is sufficient.

Abundant fresh air secured by a good ventilation system.

When these four conditions are provided for orchids, a general condition approximating that which exists in their native haunts is secured. Success is then practically certain.

Never take a chance during cold snaps in winter. Watch the temperature. Any temperature below forty-five degrees is fatal, even for one night.

For watering, Mr. Ellis has an attachment to the kitchen heater, similar to those used in bathrooms. He warms the water by the turn of a tap. This is an ideal plan.

The floor, or part of the floor, of the greenhouse should be earth. This will keep the air humid.

Pots, cribs, or baskets may be used in which to grow orchids. If pots are used they must be well drained.

Soil is seldom used; in its stead, peat, moss, or fern-fibre are used.

Excessive heat and drought are both to be carefully avoided.

The night temperature for orchids should be about ten degrees lower than the day temperature.

VARIETIES FOR THE BEGINNER

In the matter of varieties, Mr. Ellis grows only those which will bloom in winter. Of these he has tried about fifty different varieties. The following are recommended by him:

First best six—*Cattleya Trianae* or *Labiata*, *Cattleya Schroderae*, *Oncidium variocosum* *Rogersii*, *Odontoglossum grande*, *Laelia Anceps*, *Cypripedium insigne*.

Second best six—*Cypripedium nitens*, *Laelia auctemnale*, *Oncidium Forbesii*, *Vanda coerulea*, *Lycaste Skinneri*, *Laelia praestans*.

To enrich the lawn and cause a more luxuriant growth, there is nothing better than raw bone meal evenly strewn over the surface at the rate of ten pounds to three hundred square feet. Or one of the many patent lawn enrichers may be used in the same manner. A brisk going over with a sharp steel rake should follow application of enricher or bone.

Planting Roses and the Time

Jas M. Bryson, Toronto, Ont.

The planting of roses should always be deferred until the soil is in a proper condition to receive the plants. There is no greater mistake than planting roses in wet soil. The soil to be in proper condition for planting should be dry and free. The best time to plant roses which have been raised or grown in Canada, is the last week in October, and for imported roses the second week in April. With good culture roses may be planted safely up till the middle of June. Care must be taken not to plant too deeply. By placing the union or callus three inches below ground you will be about right. For dwarf roses see that the roots do not cross or coil around. This is most important. Be particular also to see that no manure comes in contact with the roots directly, and always firm the soil by treading it down with the feet, but leave a rough surface.

The best soil is a strong holding argillaceous loam, so tenacious as to almost touch clay in some of its more inviting forms. Not a few soils that are called clay when wet, turn into strong loam when dry. Though such loams are on the whole most favorable for the perfect cultivation of roses it must not be asserted that they cannot be grown on others. I have seen prize roses grown on soil so light that it could be driven and drifted like sand during a protracted drought, and also on sheer peat. The natural quality of rose soils is often of less vital importance than might at first sight appear, inasmuch as in many cases the soil is the mere dish, shell or basin to hold the materials which are freely given to roses to feed upon. While saying this much, so that nobody may despair of growing fair roses with soils such as they have, or can make with the materials within reach, it should be added that no loam can be too good or too rich for roses. In selecting a site for a rose border or rose garden, the cultivator should endeavor to marry the three S's, namely, sun, shade and shelter to air.

Making Garden Paths

John Gall, Inglewood

With the necessary materials at hand, it is a simple matter to make a firm, sound pathway anywhere. The first thing to be done is to peg out the site at the width desired, and the next to dig out a V-shaped trench along the whole length. Then, if the soil is of a light and porous description, it is only necessary to place a quantity of rubble, composed of broken bricks and large clinkers in the bottom, then a thickness of coarse gravel, and finally enough fine binding gravel to bring the surface up to the required height when well rolled

down. Should the soil be heavy, or the situation damp, it is necessary to put in a two or three inch drain pipe along the bottom of the trench. The joints of the pipes must be covered with a turf, grass side downward, then cover with the rubble, coarse and fine gravel as before.

A foot is about deep enough to dig the trench. These directions serve for all ordinary purposes, remembering, of course, wherever a drain-pipe is put in,

Plans for This Year's Garden

J. McPherson Ross, Toronto, Ont.

WHEN planning the improvement of your home surroundings, have in mind some special feature of ornamentation, either by trees, shrubs, or flowers, different from your neighbors within the bounds of good taste. See in your mind's eye your house as a picture and your grounds surrounding as the frame to set it off.

When an artist paints a picture he has first the story to tell. Then with the aid of his canvas, paints and brushes and technical skill he tells the story as best he can.

The gardener gives us the real picture. True he has the real sky above him and real nature and things to work with. Then on the canvass of his ground he spreads the green grass, either by sodding or seeding it. With real plants he produces real flowers. Real trees grace his lawn, and real roses climb up his cottage window.

To have a nice front lawn it should be properly laid out, and to do this let me point a few rules to observe: Never plant anything in front that will obstruct the view from the window to the street, or obstruct the view from the street to the house. In other words, plant your garden so that it will look nice from the house or the street.

Have as much grass as you can. Nothing looks better than a nice, green, neatly-kept lawn. Place your walk as much to the side of your lot as possible and on that side which you use when you leave your house going or returning from business. Leave enough room on the narrowest side to allow a shrub or group of three to grow in. This enables you to have a larger lawn in front of the house curving your walk gracefully to the steps, and to branch the walk to a side path to suit children and the butcher and baker for kitchen demands.

If your ground is low raise it up so as not to have water standing on it after the spring thaws or heavy rains. Nothing is more disagreeable than to have to wade through water on the paths.

If your plot is large enough to have a border let it commence ten or fifteen feet back from the front fence, running back

that it must have a slight slope in the direction of the outlet. Paths may be surfaced with gravel, ashes, flagstones, concrete or cement. Where gravel or ashes are employed, the middle of the path must be slightly higher than the sides, and it is most important where these are used, that the rubble and coarse gravel is well pounded before the fine gravel is put on. The gravel should be about three inches deep.

two borders full of plants, not breaking it up by numerous meaningless small beds.

Another important feature of your home improvement is to make your place attractive in winter. This can be done by having a few evergreens grouped in threes or singly. The contrasting effect of evergreens with the winter snow is fine. Evergreens give an air of comfort to the place by their appearance. If you have a steep terrace or bold bank its stiffness and barrenness is removed by planting a few dwarf evergreens starting near the bottom and gradually working your way diagonally across till you come to the top, dotting an evergreen here and there, just as you may notice them growing up some farm hillside. For this purpose the junipers are just the thing or a few shrubs may be sparingly planted for the same purpose.

In the way of manuring, dividing and keeping the weeds down you may have by a judicious selection, plenty of flowers and foliage the season through.

The earliest flowering plants should always be planted in the most conspicuous place. Such plants as the Bleeding Heart follow any bed you may have of tulips or hyacinths. On the edge of the border or bed in front have a mass of pansies and forget-me-not, or a clump of daisies are pleasant to see. In the shady place caused by a fence or the side of the house, close to a walk, have a clump of lily-of-the-valley and some ferns. Two or more paeonies in variety are indispensable. Their bold character of foliage and flower make them fine lawn plants, either singly or in a group.



The First Prize Lawn of Ex-Mayor Guest, St. Thomas, Ont.

For tall herbaceous plants we select larkspur, rudbeckia, Bostonia, phlox, campanula, fox glove and hollyhock. For shorter growing kinds we have columbine, oriental poppy, dwarf phlox, iris in variety, achillea and chrysanthemums.

In our garden we must find room for annuals such as asters, petunias, nasturtiums, stocks, antirrhinums and Indian pinks. For a small circular bed at the end of the walk nothing looks better than one of pink geraniums massed and margined with a circle of sweet alyssum. If our space allows and we have room for one of a more ambitious nature let the centre be a castor oil plant encircled by a row of canna, next a row of coleus Verschappeldint of Perilla

Nankiman, a row of scarlet geraniums, margined by a circle of suitable edging. A little study and observation combined with experience gives anyone interested the necessary knowledge to make any number of combinations.

Climbing plants have an important part in our decorative work. For brick houses or stone the Boston ivy is unsurpassed, but for training up on a verandah or trellises roses are first, and then clematis.

For annuals, the most valuable would be cobea scandens, morning glory, dolichos and scarlet runner.

Make it a point to have some floral effect by one flower to dominate your garden.



Section of Plant Before Dividing

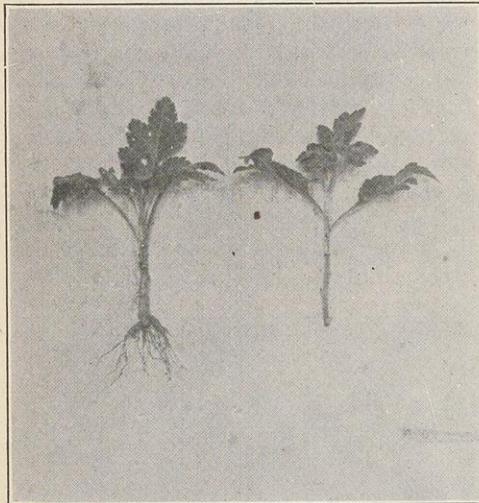
ture forty to forty-five degrees, or they may be put in a light cellar or basement in about the same temperature. Keep the soil moist, not too wet, all winter. Bring the plants out in the spring early in March, and start them into growth on the window before dividing them up or taking cuttings.

White—Early Snow, Smith's Advance, and White Cloud.

Yellow—Golden Glow, Golden Gate, and Golden Chadwick.

Pink—Glory of Pacific, Pacific Supreme, and Uganda. Nellie Pickett,

WHEN the roots of chrysanthemums are about an inch in length, which should be in about five or six weeks from the time they were set, they can be potted off singly into small two and a half or three inch pots,



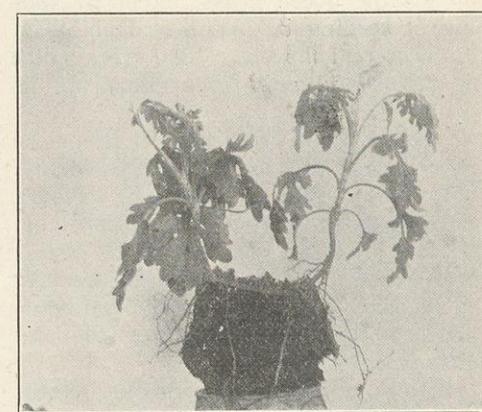
Chrysanthemum Cuttings, Rooted and Not Rooted

or set about one and one-half inches apart in shallow boxes. Use the same kind of soil and treatment as recommended for the root divisions, and re-pot them into larger pots as soon as the roots fill the smaller ones. About the end of June or early in July the plants may be potted into quite large seven or eight inch pots. The pots may be sunk to the rim out of doors in the open garden early in June. Place a piece of slate or stone, or an inch or two in depth of coal ashes underneath the pots outside to keep out earth worms and prevent the roots from getting through the bottom. The plants may be planted out of the pots in the open ground instead of potting them. Give the plants plenty of water at the roots and keep the tops

sprayed every day with clear or soapy water, in hot weather, as well as with insecticides.

Plants can be raised from seed that will flower the first season if the seed is sown early in February indoors. The young seedlings should be transplanted singly into small pots, or be set about two inches apart in shallow boxes in good potting soil when four or five small leaves have developed. Grow these on indoors until about the middle of May, when they may be stood out of doors to harden, and be planted out in the open garden, or be potted into large pots, and the pots sunk out in the garden, and treated as before described for plants, from divisions and cuttings. The summer care and insect enemies of chrysanthemums will be described in a later issue.

During the winter place the plants in a sunny window away from fire heat as much as possible to flower. A temperature of fifty to fifty-five degrees will suit them. After the plants are through flowering, cut the tops down and place the plants in a cool window, tempera-



Section of Plant After Dividing

cream color; Brutus, orange red; and Black Hawk, crimson, are other good varieties.

Good pompon (small flowering) varieties are: Rose Travenna and Alena, pink; Snowdrop, Anna and Nic, white; Klondike, yellow; Mme. Beau, bronzy old gold; Julia Lagravere, red; Lady-smith, pink.

Liquid solutions of manure water should be given chrysanthemum plants as soon as the buds show, or earlier if necessary. It is best to discontinue the liquid manure as soon as the flowers show color. Clay's Fertilizer or Bon-ora, sold at seed stores, are good commercial fertilizers. One-fourth part of a pail of cow manure and about one pound of chicken manure put in a pail, the pail filled up with water, well stirred, and



Young Chrysanthemum Plant Before and After
"Pinching" or "Topping".

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Notes Gleaned from the Short Course in Apiculture

(By a Student)

All the good things that were said at the recent Short Course in Apiculture at the Guelph Agricultural College would fill a small book, but there are quite a few points which cannot fail to interest the experienced as well as the beginner at beekeeping. A little previous experience only whetted by appetite for more, and I went to the short course prepared to partake of the "milk" of beekeeping, and incidentally taste some "strong meat." I shall not, I think, have to recommend beekeepers to attend next year if the promise is that it will be as good as the last. Ye editor has already printed an address on "Races of Bees," and perhaps has more pleasant surprises "up his sleeve" drawn from the same source. If so, let us have them.

The first point which interested me in particular developed during a lecture by Mr. S. B. McCready, Director of Elementary Education. He was speaking on "The Structure of Flowers," and touching on the attraction of flowers for insects he mentioned odor and color. The odor, it seems, proceeds from small glands which secrete ethereal oils, and these in turn are volatile. The question as to which offered the greatest attraction to the bee has been discussed in the bee journals, and the preference seems to be on the side of odors. Then the query came promptly to my mind, "When does the secretion of these oils and the nectar commence and finish in the flower?"—a question which had to wait until Mr. L. Caesar was discussing "Bees and Their Relation to the Fruit Trees." Here I found that the secretion commenced with the opening of the flower under ordinary conditions and ceased when the flower was fertilized. The troublesome question of spraying fruit trees in bloom was being dealt with by Prof. Caesar, and he said, "If the blossoms are sprayed with a poison at the time that the bees are working, it will have a disastrous effect on the bees, and I feel that laws providing for protection in this line are quite justified. When about eighty or ninety per cent. of the bloom is off the trees, however, you will find very few bees around the trees; and so long as the trees are left until this stage, there is no danger from wholesale poisoning of bees."

Touching on the value of the bee to the fruit man, Prof. Caesar commented that "the real value of the bee in cross pollination is often over-estimated by beekeepers, some of whom get the idea that it is the only insect to which the fruit farmer can look." Its real value lies in the fact that the bee is entirely



An Old-time Straw Skip. Apiary Wm. Krouse, Guelph, Ont.

dependent upon pollen and nectar for food, and hence will work on the blossoms under more adverse conditions than most other insects.

Some of our beekeepers are filled with apprehension regarding the practice of spraying for Cherry Fruit Fly. Prof. Caesar's remarks on this point will assure them of its harmless nature. He said: "This fly is very much like the house fly and dissolves sweet substances off the surface of the leaf. In taking advantage of this fact, we spray the leaves with a sweet poison and the question is 'Are we going to kill bees by doing this?' In order to test this point, we kept large sheets spread under the trees we were spraying on the understanding that any insects would fall down on this sheet. We did not find a

single bee on the sheets, so that we were convinced that spraying for Cherry Fruit Fly does not affect the bee whatever."

Professor Morley Pettit in his talk on "The Home of the Bee and Its Food," showed the use the bee makes of pollen as an article of diet. It forms the nitrogenous portion of its food and is always used during the developing stages of the workers and drones. It is also used considerably by the young bees, but honey forms almost the sole article of food for the field bees. The absolute necessity of having pollen in the hive in spring if we wish to be successful in preparing strong colonies for the clover flow has suggested the use of artificial pollen in the form of ground pea meal, unbolted rye flour, and such like, but the advisability of this practice has not been definitely fixed. There is a danger of the bees plugging up the combs with this artificial pollen, and as soon as the real pollen appears they stop the use of the substitute.

Referring to the home of the bee Prof. Pettit pointed out that the modern hive is the result of observations made of the natural home. It has been found that the bee will build comb in spaces more than three-eighths of an inch wide and will close up with propolis cracks or opening less than one-quarter of an inch wide. This will explain the bee space used on the top of frames, between the end bars and end of hive, and between the frames themselves.

Discussing the "Manufacture of Hives, Etc.," Mr. Denis Nolan laid special emphasis upon the need for accuracy in the construction of hive parts. "Every part of the hive," he said, "should be so made that it will be interchangeable and will fit in with every other part." For this reason he insisted that home manufacture of hives was only possible where machinery was installed. Even the skilled mechanic with the hand tools varies slightly, and by the time he has made three or four hundred complete hives considerable variation can be noted.

Some difference of opinion was apparent as to whether the bee space should be left on the top of the frames or whether it should be under the frames. Mr. Pettit was in favor of the latter arrangement, claiming that it aided ventilation and distribution of bees in the hive. If

this were so, the swarming tendency would be lessened.

As to the size of the hive, the 10-frame hive for the production of extracted honey particularly was in favor with most of the beekeepers, and the problem of how to utilize an eight-frame hive body and make it a ten-frame super was cleared up by Mr. F. W. Krouse, of Guelph. He advised using a splice in centre of end boards or the substituting of end boards in eight-frame supers with ends used in ten-frame supers. In either case the loss was only partial.

Painting the hives was advocated, but it was suggested by Mr. Krouse that the use of distinctive marks on the hive front would aid the bees considerably in locating their own hive. Young queens were liable to go astray unless some method was adopted to aid their locating powers.

The very important problem of swarming was opened by the director, Prof. Pettit, with a lecture on "Natural Swarming." "Swarming," he said, "under natural conditions was the means taken to provide for increase, and was generally caused by lack of room, but sometimes through exposure of the hive to heat. Discontent arises in either case and swarming is finally the result." The signs of swarming within the hive are unmistakable, for he says, "When preparing to swarm the bees start to raise drones and then to build cell-cups in which to rear queens. The finding of eggs in these cups follows, and finally the capping of the cells indicates that the swarming fever is about to manifest its power. Under natural conditions, when preparing to swarm, there will be anywhere from one-half dozen to twenty queen cells.

Describing the process of swarming, Prof. Pettit said: "The swarming of bees is a delightful sight to many, but I must confess that personally I have no desire to see the bees swarm. The best thing I can compare the noise made by a swarm when emerging is to the escape of steam from a boiler when the pressure is too high for the boiler to stand. They work themselves into a fever in the hive, and then between three and four o'clock generally (in the afternoon, of course) they will rush out of the hive. Sometimes one is likely to be deceived by seeing some bees returning to the hive immediately after the swarm has issued. They will think the swarm is returning, but it is often only the bees returning from the field with a load, which have had to wait until the stir of swarming was over before they could gain entrance.

"By watching a swarm which has just left the hive, the beekeeper can tell by the actions of the swarm as to whether it is going to strike right off or whether it is going to cluster for a while. When

a swarm issues it circles in the air, describing a network of circles and curves. Should these circles widen and the bees on the outside of the circle show a tendency to make a wider circle each time

as if they were leading the others on, you can by carefully watching the side to which they are widening the circles determine which direction they are going to fly."

Systematic Swarm Prevention*

F. W. Krouse, Guelph

WHY swarm prevention? To get a larger honey yield and to save labor. We all know that if we allow our bees to swarm we do not get as large a honey crop. True, we have more bees, but that isn't the main point.

Now, how to control them. I consider system in your management comes first, no matter what kind of hives you use. Have regular days for your work. I think the size of hive I use helps me a good deal. I am speaking of extracted honey production only, as I have had very little experience in comb honey production.

To control your swarming, you have got to start the season before. You need good, young queens in your hives if you want to control swarming. In the spring, if I think there is any shortage of stores, I look into them the first day the weather is favorable. Afterwards I do not bother about them until I clip the queens.

TAKE STOCK

When I am clipping queens I take a general stock of the colony. I make notes of what I find. Later I look over my notes and map out my work. When you find your bees getting pretty strong, make your visits regularly. When you find your bees clustering out just a little or getting pretty thick around the alighting board, it is time you were at work if you want to keep down swarming. If you are a little late with your work you will find it much harder to manage your bees. If they once get queen cells capped it is harder then to control them than if you had got them just before they started the cells. I have found that if you get to work just at the right time it isn't so much trouble to keep them from swarming. I don't mean that when you have got all your bees fixed up to suit you that you can sit down and take it easy. You have got to give them room to store the honey as they need it. If you don't you will have swarming. The hardest kind of season to keep bees from swarming is when there is just enough honey coming in to keep the queen laying. That is the time when you will have your hardest work to keep them from swarming.

Old queens have a good deal to do with bees swarming. I find that if you have queens that have done extra well this season and not be any trouble in

the line of swarming, the next season they will not do so well, and you will have trouble to keep them from swarming. I have been working on this plan for five seasons, with an eight or ten frame Langstroth hive. I put the first super in the bottom in place of on top. Do it this way if there are two of you working together. Let one lift the brood nest up and the other put the super on the stand. The first man can then set the brood nest on top of it, with no queen excluder between.

Leave it there until the queen has started laying well in the bottom combs. Then see that your queen is in the bottom and put your queen excluder on. Put on another empty super and put your brood on top. Leave it for a week or ten days. If you then want to make increase, take it off and set it beside the old stand for about a week. Then move it to the stand where you want it. The reason I put it beside the old stand for a week is to get all the bees I can into the old colony. If you don't want to make any increase, you can cut out the queen cells after it has been up five or not more than eight days.

There are two advantages in handling bees in this way. It enables you to keep all the heat in the brood nest, where if you put your super on the top you lose the heat that should be in the brood nest. Otherwise the heat would go up into the empty super on top. The greatest advantage, however, is you have all the dark honey in one place or super, and where you make increase you have got rid of it altogether.

If you do not want to increase many colonies you can leave the bees on one lot of brood and shake the bees off of two other lots of brood, and set them on top of the lot you left the bees on. In a few days you will have a good, strong colony. If the weather should turn cold you will need to protect the brood in some way, or it will become chilled. I find that it does not do quite so well to handle them in this way in a deeper hive. In such hives I do not put the super in the bottom but, if I find the queen needs more room, I raise combs from the bottom up, always taking sealed brood or honey and putting empty combs in their place. In this way I give the queen plenty of room.

I find that by leaving my bees packed as high as the top of the brood nest it helps to keep down swarming. This hive is $12\frac{1}{8}$ inches deep and $17\frac{5}{8}$ inches

*A paper read at the recent short course in apiculture at the Guelph Agricultural College.



Apiary of U. H. Bowen & Son, Niagara Falls, Ont. Mr. Bowen had 190 Colonies

long. This gives about 1728 square inches more than an eight frame hive, and 1180 square inches more than a ten frame Langstroth. This is face measurement of the combs. Now, this extra room does considerable to prevent swarming.

In conclusion I would repeat that the main points in swarm prevention are system in your work, good young queens, a little deeper hive than the ten frame Langstroth, and leaving the bees packed to the top of the brood nest all the time.

Plans for a Honey House

A subscriber of *The Beekeeper* recently asked for information in regard to the erection of a honey house. The following reply has been furnished by Prof. Pettit of Guelph. Our readers are invited to furnish plans of honey houses for publication.

I regret that I have no plans on hand for an apiary building. A great deal depends on how you are planning your business. First, if you expect to continue keeping just one hundred colonies of bees, your building would be different than what it would be if you expected to devote your time to beekeeping and start a series of out-aparies. In the latter case you would need to decide whether you intended to have your honey all home for extracting or grading, or whether you expected to keep a building for that work at each yard. If you have been keeping bees sufficiently long to have one hundred colonies, you have an idea of about how much space you would need for doing the different work that has to be done. You would need room for the power extractor, and engine, if you decided to use one, the capping can, and storage of the crop of honey. In addition to that there should be sufficient room in the same building to pile in all the extracting supers containing the combs after they have been taken off for the winter.

I do not see any object in taking combs out of their supers for storage, as some beekeepers do. The supers have to be

piled some place, and there is no better place for keeping the combs than right in the supers. Then the latter are in out of the weather and occupy less space than they would any other way. You will need a work shop, where hives can be repaired and new ones built, combs scraped and sorted, and wax rendered from old combs or cappings; in fact all of the apiary work which can be done during the winter months. In fact, it is one of the most important points in the management of bees in large numbers, or on the farm where other work presses, to get all of the work that possibly can be done out of the way during the winter. This means that you must have a place that can be comfortably heated with a stove, where you can go any time during the winter or in chilly or rainy days in the spring, and work comfortably.

In this room you would need a carpenter's bench and a complete set of carpenter's tools; a Barnes' saw-table, which can be operated with the same small engine which runs the extractor and does other light work around the farm, is of very great assistance. By use of this, you can make a great many of the things that you would otherwise have to buy at a supply factory, and can make them just how and when you want them. In the honey room I would have a cement floor and would have it arranged with drainage troughs and the proper slope so it can be easily washed off by throwing on water and scrubbing it down us-

ing lots of water. If you have water-works or a force pump, then you can use the hose for washing down after the floor has become daubed with honey or wax in the operation of extracting. Now as to the proper dimensions, you will need to figure this out for yourself, but as I heard an old beekeeper once say that the best way to do is to figure carefully the size you want, then build your house about twice that size, and you will find that you have not too much room.

Crossing Bees

F. W. L. Sladen, Experimental Farm, Ottawa

A very important matter which does not strictly come under the heading of "races of bees," is crossing. Crossing two races or varieties of bees increases vigor and energy, and also within certain limits prolificness and size. There is a good work to be done in crossing good varieties of Italians. The races found in the lower Alps probably owe their superiority in no small degree to their crossed origin, though now the hybrid types are fixed and bred true.

It is quite impossible to distinguish a hybrid by letting a bee gorge itself with honey and putting it on a window as suggested on page two hundred and ninety-five of the present edition of Langstroth's "Honey Bee." A cross between a black and a golden will show a larger translucent band on the third segment than a good Italian from Bellinzona. A cross between an Italian and a black may even show a narrow yellow band here. Tenacity and quietness on the comb are the best signs of purity.

STRAINED AND ACQUIRED CHARACTER

One must remember that there are good, bad and indifferent examples of each race. Two factors may be recognized as causing these. First, strain. Poultry experts say that strain is often more important than breed in selecting utility fowl. This is probably true in the case of bees, but we have not yet succeeded in breeding bees with sufficient exactitude to determine the point very clearly. Second, accidents, causing characters to be acquired that are not transmitted from generation to generation. Such as an undersized worker-like queen, the result of a fault in rearing; the production of a large proportion of or perhaps only drones, the result of an accident in mating; robbing and certain cases of bad temper; the result of improper handling; and the impairment of a queen's prolificness as a result of injury sustained in the mails. Bad characters that have been acquired do not lower the value of a colony for breeding purposes, except in so far as they mask the true heritable qualities.

*Extract from a paper read at the recent short course in apiculture at the Guelph Agricultral College.

The Canadian Horticulturist

COMBINED WITH
THE CANADIAN HORTICULTURIST
AND BEEKEEPER

With which has been incorporated
The Canadian Bee Journal.
Published by The Horticultural
Publishing Company, Limited
PETERBORO, ONTARIO

The Only Magazines in Their Field in the
Dominion

OFFICIAL ORGANS OF THE ONTARIO AND QUEBEC
FRUIT GROWERS' ASSOCIATIONS
AND OF THE ONTARIO BEEKEEPERS' ASSOCIATION

H. BRONSON COWAN Managing Director

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1. The Canadian Horticulturist is published in two editions on the 25th day of the month preceding date of issue. The first edition is known as The Canadian Horticulturist. It is devoted exclusively to the horticultural interests of Canada. The second edition is known as The Canadian Horticulturist and Beekeeper. In this edition several pages of matter appearing in the first issue are replaced by an equal number of pages of matter relating to the bee-keeping interests of Canada.

2. Subscription price of The Canadian Horticulturist in Canada and Great Britain, 60 cents a year; two years, \$1.00, and of The Canadian Horticulturist and Beekeeper, \$1.00 a year. For United States and local subscriptions in Peterboro (not called for at the Post Office) 25 cents extra a year, including postage.

3. Remittances should be made by Post Office or Express Money Order, or registered Letter.

4. The Law is that subscribers to newspapers are held responsible until all arrears are paid and their paper ordered to be discontinued.

5. Change of Address—When a change of address is ordered, both the old and the new addresses must be given.

6. Advertising rates, \$1.40 an Inch. Copy received up to the 20th. Address all advertising correspondence and copy to our Advertising Manager, Peterboro, Ont.

CIRCULATION STATEMENT

The following is a sworn statement of the net paid circulation of The Canadian Horticulturist for the year ending with December, 1911. The figures given are exclusive of samples and spoiled copies. Most months, including the sample copies, from 13,000 to 15,000 copies of The Canadian Horticulturist are mailed to people known to be interested in the growing of fruits, flowers or vegetables.

January, 1913	11,570	August, 1913	12,675
February, 1913	11,550	September, 1913	13,729
March, 1913	11,209	October, 1913	13,778
April, 1913	11,970	November, 1913	12,967
May, 1913	12,368	December, 1913	13,233
June, 1913	12,618		
July, 1913	12,626	Total	150,293

Average each issue in 1907, 6.627

" " " 1913, 12,524

Sworn detailed statements will be mailed upon application.

OUR GUARANTEE

We guarantee that every advertiser in this issue is reliable. We are able to do this because the advertising columns of The Canadian Horticulturist are as carefully edited as the reading columns, and because to protect our readers we turn away all unscrupulous advertisers. Should any advertiser herein deal dishonestly with any subscriber, we will make good the amount of his loss, provided such transaction occurs within one month from date of this issue, that it is reported to us within a week of its occurrence, and that we find the facts to be as stated. It is a condition of this contract that in writing to advertisers you state: "I saw your advertisement in The Canadian Horticulturist."

Rogues shall not ply their trade at the expense of our subscribers, who are our friends, through the medium of these columns; but we shall not attempt to adjust trifling disputes between subscribers and honourable business men who advertise, nor pay the debts of honest bankrupts. Communications should be addressed

THE CANADIAN HORTICULTURIST,
PETERBORO, ONT.

Sale of Honey in Ottawa

F. W. L. Sladen, Asst. Entomologist for Apiculture, C.E.F., Ottawa

O N inquiry about the sale of honey made at several stores in Ottawa on February 26th gave some interesting results, because each had a different story to tell.

The grocery manager of a large department store that does an extensive trade with people of moderate means, finds the two and one-half pound and five pound cans or pails the best selling packages. Buying the former at twenty-seven cents and paying about two cents for freight, he is able to sell them quickly on "honey-day" at thirty-seven cents each (usual price forty cents). The five-pound pail, sold at sixty-nine cents on honey-day (usual price seventy-five cents), competes successfully with five pounds of pure strawberry or raspberry jam, for which eighty-five to ninety cents is asked. Honey being a good selling article, the day following the payday of the Government and railway employees is often chosen for "honey-day," with very satisfactory results. An examination of the honey in pails sold by this store showed it to be granulated clover honey of fine quality.

A well-known grocery store which has bought local prize honey for ten years, and makes a good show of it, sells about as many one-pound glass jars as pails. People from all parts of the city send to this store for honey. While the great majority prefer clover honey, there are some who will only buy buckwheat honey and others whose choice is "golden-rod" honey. The clover honey cost this winter eleven to twelve cents per pound and the five-pound pails were retailed at eighty-five cents, mainly to the general public; the ten-pound pails at one dollar forty cents, mainly to institutions. No offer of honey from Southern Ontario has been received by this store during the present season.

A small store in the apartment-house district has no demand for honey except in one-pound glass jars, these being obtained from a firm in Southern Ontario, and selling at thirty cents each.

A large grocery store, with several branches in different parts of the city, handles honey only in one-pound glass jars. The manager thought pails should sell well, but he had never tried to sell honey in this way.

There is a general feeling among the grocers that the high price of honey stands in the way of its extensive sale. If the price could be reduced only a little the demand would bound up and the grocers would have the necessary inducement to push it. Being a natural product, honey appeals strongly to the buyer, and grocers are willing to give it a more prominent position than its present sale warrants, because it brings them trade.

Sections had a restricted but steady sale at twenty-five and thirty cents each early in the season on the report that they were scarce, but they are now obtainable at lower prices and the trade is unsteady. A rapid sale of sections takes place in middle class stores when a retail price of nineteen or twenty cents can be made, travel stain and other slight defects being then overlooked.

ORGANIZATION REQUIRED

It is evident that the trade is not suffering from over-production or over-supply, but rather from want of organization in distribution. The grocers of the city should

be regularly visited by the beekeepers or their agents and induced to regularly stock and display honey in its most marketable form. The merits of the two and one-half pound and five-pound can should be pointed out to the grocer, and it might be suggested that he pass on to the purchasers, especially to the family man and the housewife, the good news that the fine honey they see in glass jars at twenty-five or thirty cents a pound can be bought at fifteen or sixteen cents a pound in a five-pound pail. This the grocer should be very willing to do, for he will make more money on the transaction. At the same time the sale of honey will be doubled or trebled. To give the consumer confidence the cans might bear labels similar to those on the glass jars. The consumer needs to be constantly reminded that honey is one of the staple products of Canada, and that its production is not limited, like that of choice fruits, to certain regions; that it is an article of food, not a luxury, and will keep good any length of time. The help of the newspaper press, ever ready to publish newsy paragraphs about the development of the resources of the country, might be enlisted.

People should be educated to buy granulated honey in preference to liquified honey, because the latter has several disadvantages. Not only is it slightly more costly, but in several stores visited it had started to re-granulate, and had thus acquired, for the man in the street, a suspicious composite appearance. In one store at which honey had been sold for a long time, there was shown to the writer a five-pound pail of honey which had been re-liquified and badly overheated by the grocer, who did not know that honey could be spoiled by liquifying it in boiling water on a coal stove. Liquified honey, however, always sells quicker than granulated to the average purchaser. To avoid the risk of re-granulating, the beekeeper should let the grocer have only a month's supply at a time.

It is to be hoped that the price of honey will not continue to rise, but that it will fall slightly. The fall, when it occurs, should be widely advertised. The greater the supply and display of honey the greater will be the demand. In England, owing to the uncertainty of the honey crop, honey is regarded as a luxury, and it is now beyond the power of the beekeepers to make it as popular as jam. But in this country honey has started out among its competitors with greater prestige, and the beekeepers of Canada have a better opportunity now, before the tastes of the people are fixed, than they will ever have in the future, of improving its position by distributing it abundantly and uniformly at a reasonable price and in attractive and economical packages. Of course, a great deal of honey is sold direct from the producer to the consumer, but beekeepers cannot afford to let their product be poorly represented in the stores, where most people in the cities buy nearly all their food.

BEE ADVERTISING

Appears in this issue on page 107, all display advertisements received previous to the 15th of the previous month will be placed on this and following pages regularly.

The Secretary's Corner

Morley Pettit, Secretary-Treasurer Ontario Beekeepers' Association

Ten carloads of comb honey, said to be No. 1 were lately offered to me in Chicago at one dollar and a half a dozen. If I do not accept this offer they are likely to be dumped in the lake. Does this mean over-production? No. In my estimation it means an unfortunate lack of cooperation on the part of the producers. I will venture to make the assertion that there are a million people in Chicago who do not eat five pounds of honey in a year, simply because it is not called to their attention, or is put up in such an expensive way as to be beyond their reach.

A Carleton county beekeeper, whose word I have every reason to believe, told me recently that he had last summer a twenty thousand pound crop of extracted honey from one hundred colonies, much of it being Golden Rod, and some Buckwheat, but very well ripened and carefully put up in ten pound tins. He sold this by means of a mail order business at thirteen and a half cents a pound, f.o.b. his station. There is one beekeeper who is carefully looking after the matter of distribution and is not rushing his honey into congested districts.

I would not like to say that the discussion of the Ontario honey situation, which is being carried on in United States publications by some Ontario beekeepers, should be called "washing our soiled linen in public." It is not so bad as that because it does us all good to hear what the other fellow has to say on any subject, but it does seem to me that it would look better in the eyes of our neighbors if we discussed these differences in our own journal and allowed them to read it, instead of going and talking to the neighbors about what our folks are doing.

An Instructive District Conference

Miss Ethel Robson, Ilderton

THE District Beekeepers' Convention met in London, February 12th and 13th, with a good attendance and an interesting programme. Prof. Pettit spoke on Thursday afternoon on "The Marketing of Honey." "We must cultivate a larger market," said Prof. Pettit. "This can be done in many ways. A house to house canvass in our cities will start many people using honey who never used it before. With regard to the wholesale and retail grocery trade, the question arises, How are we going to get the grocer to handle more honey? A house to house canvass will help in this, as it will increase the demand. Advertising in magazines will also help. At the price we are asking at present, is it worth while for the grocer to push the sale of honey? He naturally puts forth the most effort to sell the goods from which he derives most profit. The western market is our greatest future possibility. Our best means for reaching this is by cooperation. We must produce as much as we can and then get together and sell as cheaply as we can. Distribution is the first step. We must know where our honey is needed. If honey had been sent to Eastern Ontario this season the market would have been equalized, as they had an exceedingly short crop there.

Constant supply is an important item in maintaining a market. The packing of the honey does much to make or mar the market. An attractive package is one of the best advertisements. At present the

The statement has been made that beekeepers' associations have allowed themselves to be tools for the production of more beekeepers. When I got that far I took the trouble to look up the constitution of the Ontario Beekeepers' Association to find out what the object of that Association really was. I learned that the founders of the constitution were very discreet and avoided saying anything about the object of the Association in the constitution. It merely states that the association shall be composed of those interested in bee-keeping, which is certainly sufficiently vague. However, we are incorporated under the "Act for the encouragement of Agriculture, Horticulture, Arts and Manufactures," and this act provides that the objects of such societies shall be "to encourage improvements in agriculture, horticulture, manufactures and useful arts." Under this act we receive a grant of money from the Ontario government annually, and at the last convention a delegation was appointed to ask the government that this grant be increased. The question that arises is, shall this money be used for the benefit of beekeepers at large, or for those who have already been members for a certain length of time. Let every member of the association and any other Ontario beekeeper who is so disposed, write a card to The Beekeeper, stating his views on this question.

This is the month for a great many renewals of membership in the Association. Something over four hundred memberships expire in April, and as bees are now getting active and plans are being made for the summer's work, you will want to make sure not to miss the May number of The Beekeeper.

five-pound lithographed pail is in the lead, but there is also a good demand for the ten-pound lithographed pail in the west."

Question: "What price do you get for honey in the west?"

Prof. Pettit: "Twelve cents for small quantities, ten and three-quarter cents for plain pails. Honey is put up gross weight."

Question: "Is it an advantage to put honey in glass?"

Prof. Pettit: "I would not advocate it. The MacDonald lithographed pail is the best pail we have if the lid were changed."

Mr. Burnand: "The American pail is excellent. It will not leak. The only objection, the breast will not permit of emptying all the honey."

A representative of the MacDonald Company was present. He assured the members that his company would produce a pail that was satisfactory. At present the pails are not strong enough at the rim to hold the cover firm."

Mr. Newton: "As regards sale of honey, I ship all to the west, and orders are increasing every year. The home market is being cut by beekeepers selling too low. Canvassing is a splendid proposition. All honey should be carefully strained for the sake of appearance."

Mr. Holtermann: "The purchasing power of the west has been reduced, and beekeepers are feeling the pinch."

A Member: "Honey as a staple food is not put on the market as it should be. It must be put up in smaller cans that can

be sold for twenty-five cents and one dollar."

A Member: "We have to over produce in order to get a good market."

SPRING MANAGEMENT

In the evening Mr. Lunn, Fingal, spoke on "Spring Management." "An old queen may be as good as a young queen, but I find the young queen has the most bees and abundance of stores gives the best results. Go over your colonies in March or April to find queens. If no pollen is coming in, feed a substitute meal made of oats, barley, wheat or peas. If short of stores, feed a comb of honey or syrup. He would not advise buckwheat. Some milder kind of honey is preferred."

Question: "Will candied honey induce brood-rearing as much as liquid?"

Answer: "Yes, I think more. Feeding fall capped honey will not stimulate as much as syrup."

Mr. Holtermann: "If bees are not moving honey, bruise the comb and bees will take it away for brood quicker."

Question: "Does it pay to buy bees with a queen for a weak colony?"

Mr. Bainard: "Yes; I bought eight costing eighteen dollars—return forty dollars."

Question: "If a beekeeper has a surplus of dandelion honey, will it do for fall feeding?"

Answer: "Yes."

On Friday morning Mr. Holtermann spoke on "Comb Honey Production." "A colony should have ten pounds or more honey for brood rearing in the spring. I am very much opposed to feeding back honey. Use sugar syrup, thin. Clip queens at any time, as early as they are working. I clip both wings as close as possible. Leave off the excluders until clover flow commences. This enables the queen to raise more brood. When unpacking do the work as quickly as possible and line up hives afterwards. We use a spirit level for placing. Do not have hives leaning sideways; a little forward is my practice. Attend to the strong colonies first and the weak ones last. Do the extracting as near the close of the season as possible. Keep the extracted combs in the honey house as long as possible, as this prevents robbing. When taking in honey, keep covered with a wet cloth and have an aperture in the honey house to pass supers through instead of using the door. Do not store empty combs on weak colonies, but stack six or seven high on the strong colonies. In this way they can be handled more quickly."

"When putting away in the fall, weigh eight or ten colonies on the scales and then you have an idea how they are. Never feed less than ten pounds to any colony, and feed as late as possible. Each colony should have at least thirty-five pounds of stores. Raise the packing case one foot from the ground and the bees will be less likely to get chilled in the spring. Have a small hole in the top of the packing case for ventilation. Give bees salt and water if they will take it."

QUEEN REARING

Mr. Wm. Elliott followed with "Queen Rearing" for his subject. Mr. Elliott has been one of our most successful queen rearers. "For queen rearing I select a number of my best hives during the summer, and the following season I choose from these the one which has done the best work for my queen that is light in color, one that deposits her eggs evenly, and one whose progeny is strong winged. Into my best colonies I put drone comb in order to

rear good drones for mating with my young queens. Royal jelly for starters should be taken from unsealed cells. In making the artificial caps after dipping in the wax, turn over and give a quick whirling motion. This strengthens the walls of your cup quickly. Do your queen rearing while the honey is coming in. Do not feed artificially or buy queens that have been reared under these conditions. Do not re-queen by placing a queen cell in a strong colony. Introduce a young queen. If you can be sure of buying from a reliable man, I think it

would pay better than giving your time to rearing your own queens. I am not in the business now, so I say this without a selfish motive."

At the afternoon session Mr. Chrysler took the subject of "Steam in the Workshop," as Mr. Nolan was unable to be present. Mr. Chrysler's steam equipment has been installed by his son. He melts his cappings with a coil of steam pipes; he also has a cupboard heated by steam where he melts his honey. He does not like a steam-heated honey knife.

Cooperation among Beekeepers

Wm. A. Weir, O.A.C., Guelph, Ont.

The production of the province has increased by leaps and bounds and by present indications will advance very rapidly in the next few years. Many beekeepers are taking up beekeeping as a business, depending entirely on it for their livelihood. Many who formerly neglected their bees have, through cooperative education, taken up the care of them, not only from a honey revenue standpoint, but from a pollination insurance standpoint; the increased interest and publicity has naturally enough produced more beekeepers, and all these influences mean an increased production.

Without organized effort the honey market of Ontario has been able to absorb at a fair price all the products of the apiary, but now it is getting beyond that and fair prices are suffering. The bogey of over-production is painted by some but there is absolutely no need to fear over-production in this fair province. Ontario honey is the best in the world. There is none that compares with it and the sale of same is a matter of business organization and push. Furthermore we know from data that has been collected, that present conditions are largely due to a lack of distribution. What then shall we do?

The answer in brief to this question is simply "Organize and assume your share of the necessary responsibility." To those who have studied commercial conditions, the reasonableness and the profitableness of such action is quite clear. In the first place after producing a first-class article the beekeeper finds cheap competition in the local market a serious obstacle to obtaining fair prices, and if he seeks an outside market he finds that this is controlled by a few wholesalers, who do not give honey the prominence it deserves or who do not discriminate closely between grades, hence they do not recognize the superior quality of the market seeker's product.

Individual marketing also deprives honey of one of the most powerful factors for wider markets: "Advertising." The result is that the public do not appreciate the staple and valuable nature of our product. It is superseded by ordinary cane sugar products for no other reason than this. Advertising can be obtained cooperatively at less cost to the beekeeper and may take the form of a trade mark, special circular, newspaper, journal and novelty advertisements. These forms are all used to attract attention and if we put up a strictly high-grade article honey once introduced into the home will hold its own, and finally be recognized as a staple article of food.

There are various other detailed advantages, but space will not permit their being dwelt on here. Let it suffice to say that this question of cooperation is one for the individual beekeeper to investigate, talk over with his fellow beekeepers and act on before he is again confronted with the pro-

blem of marketing a large crop. If procrastination is manifested here it is to my mind beyond doubt that all are going to wish they had acted more wisely not many years hence. Why repeat the foolish act of "locking the stable after the horse has gone"? Now is the time to act and the county associations can well afford to give this subject a good hearing at their Winter or Spring meetings.

Before taking up the practical application to our profession of the mighty principle of cooperation, it seems necessary to enlighten many as to what is meant by "cooperation." Much as this term has been and is being used by speakers and in conversation, it conveys a hazy, indefinite idea to many. When you examine the principle of cooperation you will find that it has no magic in it, but that it is just a simple junction of forces among a number of persons more or less similarly situated and having a common object in view for attaining that object. It cannot have anything but self-help as its aim, since it only helps a man to help himself, and according to the degree of effort on the part of the individual so will he receive returns. It cannot be tyrannical because there are too many active, thinking, assertive minds with equal rights guiding the aims whatever they be.

In every case cooperation must be preceded with an individual sense of necessity. It is essentially a child of necessity and cannot be born until the necessity is present and is realized. Some beekeepers long ere this realized that there were other fellow creatures occupied in the same work, meeting the same difficulties, and working for the same end, and as a result almost unconsciously and certainly very gradually, they have cooperated or united one with another to act on the principle that "two heads are better than one."

EDUCATION NEEDED

Here we have the first necessity for cooperation unfolded—Education. The older beekeepers realized this, and almost spontaneously there sprang up associations made up of beekeepers. Their aim was to exchange ideas and give one another's experiences, methods and results. The cost was slight and the benefits almost unbelievable.

From the exchange of ideas it was soon found necessary to tackle problems collectively which could not be dealt with individually. Disease among bees was making terrible headway and playing havoc with apiaries. A collective appeal was made to the Government to enact legislation and appoint efficient officers to administer the same. Collectively their voice was heard and the Government turned a deaf ear to the individual beekeeper who was lobbying strenuously against such a law. The strong arm of numbers played a powerful

part. Then with the advance of agricultural education the Government did not forget the representations of the associated beekeepers, but established a department of apiculture at the Ontario Agricultural College at Guelph, where information on bee-keeping has been and is being collected and put to valuable practical use; short courses are organized at a trifling cost to the bee-man, and the whole industry supplied with information and encouragement of the right kind.

New Brunswick Activities

The directors of the New Brunswick Beekeepers' Association met in session at Fredericton, March 4th, when the following motions were made and carried:

First: That this Association respectfully request the government to enact during the present session of the Legislature, a law for the Prevention of the Introduction and Spread of Contagious Bee Diseases; also a law to protect bees against poisoning through the spraying of fruit trees in bloom with poisonous sprays.

Second: That, whereas the beekeepers of this province have formed an organization for the purpose of promoting the bee-keeping industry by: (a) An organized campaign of education; (b) Securing legislature favorable to the beekeeping industry; (c) Enlarging and improving the markets for bee-products through demonstrations and advertising; (d) Offering supplementary prizes and rewards at exhibitions, to induce the production of a better article; (e) Furnishing beekeepers with supplies at cost; and by (f) Every other line of operation that organized effort may take up to promote an industry;

Therefore, be it resolved that this organization respectfully ask that the government recognize our just claims for a substantial grant of money to assist in carrying on the above work.

Third: That the secretary-treasurer be authorized to draw up, and have printed, report forms for general distribution to members of the association.

Fourth: That the secretary-treasurer be authorized to take all necessary steps to furnish members of the association with supplies, at cost.

Fifth: That the president and secretary-treasurer be a committee to draw up recommendations for prize lists for honey and apiary supplies to be used by the various exhibition associations.

During the afternoon, Provincial Apiarist H. B. Durost, gave an address before the members of the Farmers' and Dairymen's Association. Mr. Durost's remarks, while few, were to the point. He said that there is probably no better location on the continent for honey production than we have in New Brunswick, yet beekeeping is not occupying the position amongst agricultural pursuits that it should, because the business is poorly understood. Better methods are needed and more knowledge of the bee and its habits.

The spring organization meeting of the Wellington County Beekeepers' Association will be held at Moorefield, April 13th.

A series of six lectures was given by Mr. H. B. Durost, Provincial Apiarist, during the short course at Woodstock, N.B. Forty to fifty men took the lectures.

Mated pairs of Silver, black and patched foxes for sale.
Also options on 1914 puppies for summer delivery.
JOHN DOWNHAM, Box N, Strathroy, Ont.




FLOWER POTS

Hanging Baskets and Fern Pans FOR THE SPRING TRADE

We make the "Standard" Pot, the best Pot in the world—uniform, best of clay, well burned, in every respect superior to all others.

All our pots have rim on shoulder, thus allowing them to be placed together perfectly and preventing breakage in shipping and handling.

Place your Spring Order NOW.

A complete line and large stock of all sizes kept on hand to ensure prompt shipment.

Send for NEW CATALOG and PRICE LIST

The Foster Pottery Co.
HAMILTON ONTARIO
Main Street West

Ontario Fruit in the West

E. F. Palmer, Ontario Fruit Branch

At the convention of the International Apple Shippers' Association, Cleveland, Ohio, August, 1913, Ontario fruit carried off premier honors, in competition with fruit from Oregon, Washington, Colorado, Virginia, and other states. At the Canada Land and Apple Show, Winnipeg, October 10th-18th, 1913, Ontario fruit was awarded first and second prizes in the five box lots of apples. This was the only open competition for apples. British Columbia fruit came third. At Rochester, at the annual meeting of the New York State Fruit Growers' Association, January 7th to 9th, 1914, Ontario fruit won first prize in the three box lots of apples—the only open competition. Oregon and New York State were "also rans."

Ontario, in the only three competitions in which she entered, carried off the premier honors in each case. Who says Ontario cannot produce as good or better fruit both as to quality and appearance, as can be grown anywhere in the world, or, coming nearer home, in America? British Columbia, Oregon, Washington, Virginia, and New York States among others had to take a back seat when Ontario chose to compete.

That is one side of the question: Ontario produces the finest apples in the world. The other and vital side of the question, as I stated in the February issue of The Canadian Horticulturist, is that Ontario, as a whole, is not producing such fruit—or what is almost, if not quite, as important, she is not, as a province, putting her fruit up in such a manner that

Douglas Gardens

OAKVILLE, ONT.

The short list published in this space in the March issue is continued as under:

Anemone Japonica, 3 vars., each 15c; 10, \$1.25.

Artemisia lactiflora, new, each 25c.

Asters (Michaelmas Daisies) 13 vars.; each 15c; 10, \$1.25.

Astilbe, (Spirea) 4 vars., each 15c; 25c; 30c; and 35c.

Bellis Perennis (English Daisy), 2 vars., each 15c; 10, \$1.25.

Boltonia asteroides, each 15c; 10 for \$1.25.

Campanula (Bellflower) 4 vars., 1 yr plants; each 20c; 10, \$1.50.

Dicentra (Bleeding Heart), each 20c

Digitalis (Foxglove), 5 vars., 1 yr plants, each 20c; 10, \$1.50.

Helenium, 5 vars., each 15c and 20c.

Hemerocallis, 3 vars., each 15c, 20c; 10, \$1.25, \$1.50.

Heuchera, each 20c; 10, \$1.50.

Kniphofia (Tritoma), each 15c; 10 \$1.25.

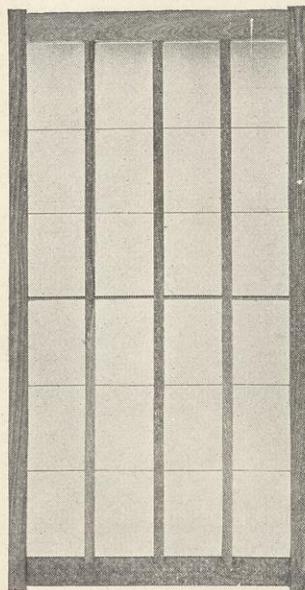
Shasta Daisies, 3 vars., each 25c; 10, \$2.00.

Above prices include carriage prepaid

These and many other plants are described in our Spring Planting List sent free on application. Early orders are recommended.

JOHN CAVERS

RED CYPRESS HOT BED SASH



Size 3 ft. 2 in. by 6 ft. for 4 rows of 8 in. butted glass.
Price, \$1.20 in Clear Cypress.

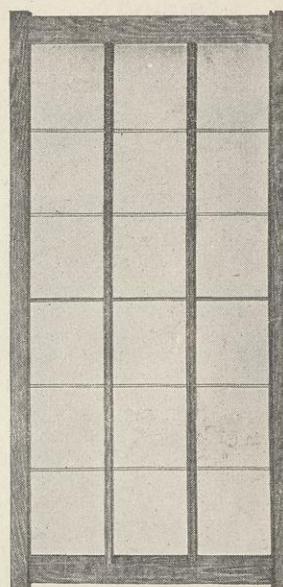
What a pleasure to have home-grown vegetables and flowers weeks ahead of the regular season. A hot bed fitted with our superior Hot Bed Sash will ensure this.

DURABLE

Our Hot Bed Sash are made of the very best material, put together to withstand the most severe usage, and are guaranteed to last for years.

All the joints are tight fitting, blind mortised and white leaded before being put together. A half-inch oak rod runs through the bars and into the stiles. A metal pin is driven into each of the bars and stiles through the rod. In this way each bar is held in the proper place and prevented from sagging.

Folder Sent on Request



Size 3 ft. by 6 ft. for 3 rows to in. lapped glass.
Price, \$1.15 in Clear Red Cypress.

BATTS LIMITED 374 Pacific Ave. **West Toronto**

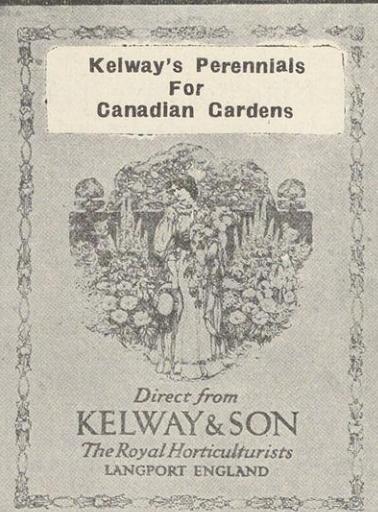
GLORIOUS GARDENS from ENGLAND

KELWAY'S famous Hardy Herbaceous Perennials—Gaillardias, Pyrethrums, Paeonies, Delphiniums and others—are from strong, country-grown stocks which flourish under almost all conditions of soil and climate and make it possible to reproduce successfully in this country much of the charm and beauty of the finest old English gardens.

Choice named collections (specially picked to suit Canadian conditions) of Paeonies from \$3.75 to \$17.00; Delphiniums from \$2.25 to \$13.50; Gaillardias from \$1.50 to \$4.50; Pyrethrums, \$1.50, \$3.00 and \$5.10 a dozen.

Full particulars and illustrations are given in the Kelway Manual of Horticulture mailed Free on receipt of 60 cents, by

KELWAY & SON
LANGPORT - SOMERSET
ENGLAND
20870



This is the Kelway Book which every Garden lover should write for to-day

it appeals to the consumer. Western dealers are accused of being unjustly prejudiced against Ontario fruit, and while there is some truth in this, yet they also have reason to be prejudiced, to some extent at any rate.

THE CRITICISM OF A FRIEND

The following are the contents of a letter, written from Regina, under date of January 13, 1914, and recently received by P. W. Hodgetts, Director of the Fruit Branch, from one of Ontario's leading apple growers.

"Being desirous of finding out, for myself, first hand as to the requirements of the apple market at Regina and Moose Jaw, I took our last car at the beginning of December and accompanied it to Regina, where I placed it in storage. It consisted of boxes and barrels, about half a car of each. They were all Spy and No. 1 stock throughout.

"I have met practically every dealer of importance in Regina and Moose Jaw (retailers only), and could find none who had boxed apples from Ontario. Several cars of Ontario barrel stock were placed here and the most of it was horrible to behold. The only barrel stock I saw, which I was not ashamed of, was put up by a Fruit Growers' Association, and sold at Moose Jaw.

"Fully 90 per cent. of the retailers here, being so dubious of Ontario stuff, have quit it entirely and stock up with the western fruits.

"I have been able in almost every case to interest the retailers sufficiently to have them examine these apples, and they all appear enthusiastic about the wrapped and boxed apples. It was a big surprise to me to hear most of them remark that 'this was the first lot of Ontario boxed stuff they had seen.'

"The one feature which has been most gratifying is the fact that this car of fruit is superior to any Western fruit I have been able to find on sale.

"I will list as briefly as possible my observations of conditions as they at present exist at Regina, Moose Jaw, and surrounding country.

"Ontario apples are admitted to possess the highest quality.

"Ninety per cent. of the dealers state that they will never buy barrel apples again.

"Ninety per cent. of the dealers here are stocked entirely with western boxed apples now. They buy western stuff on account of getting an honest and uniform grade throughout.

"Seventy-five per cent. of the retailers are prejudiced against the Ontario pack. These retailers state that they would favor the Ontario apple if they could get it wrapped and boxed and honestly put up.

"Ontario can grow the best apples known, but in spite of this Ontario apples have a bad reputation.

"It is high time that the crooked dealers were roughly handled.

"This lot of apples will net us approximately five dollars a barrel and two dollars a box."

I believe I voice the desire of the greater part of the fruit growers and shippers of Ontario when I say that we want the Inspection and Sales Act changed as to give us inspection at point of shipment, and that inspection there shall be final.—D Johnson, Forest, Ont.



**BUY CARNIOLANS
IN CARNIOLA**
Pure Carniolan Alpine Bees
Write in English for Booklet and
Price List. Awarded 60 Honors.
Johann Strgar, - Wittnach
P.O. Wocheiner Feistritz
Upper-Carniola (Krain), Austria

BEES FOR SALE

For Sale — Early swarms at fall prices. $\frac{1}{2}$ lb. bees \$1.00, 1 lb. bees \$1.50, f.o.b. here. Add price of Queen if wanted. Untested Italian Queens, 75c each, Tested Italian Queens, \$1.25 each. These are bred from best honey-gathering strain. No disease. Safe arrival and satisfaction I guarantee to any Express Office in Man., Ont. and Que., which has connection with Detroit, Mich. This is undoubtedly the best way for Northern honey-producers to increase and improve their stock. Delivery begins about April 5th. Capacity, 40 swarms per day. You will get your bees when wanted, or money back by return mail.

W. D. ACHORD, FITZPATRICK, ALA., U.S.A.

FOR SALE

Swarms of bees in packages. Replace your winter losses and strengthen weak colonies with young, healthy Italians. $\frac{1}{2}$ -lb. packages, 90c. each; 1-lb. packages, \$1.25 each; 2-lb. packages, \$2.45 each. Young, untested Italian Queens, 75c. each. No disease. Safe arrival and satisfaction guaranteed. Let us send you our little circular and price list on our queens and bees.

BROWN & BERRY
HAYNEVILLE - - ALA., U.S.A.

Bees and Bee Supplies

Roots, Dadants, Ham & Nott's goods.
Honey, Wax, Poultry Supplies, Seeds, etc.
Write for a Catalogue

THE CHAS. E. HOPPER COMPANY
185 Wright Avenue, Toronto, Ont.



Bee Supplies Bees and Queens

Improved Model Hives
Sections Comb Foundation
Italian Queens
Bees by the Pound Packages
Etc., Etc.

EVERYTHING for the BEEKEEPER

Catalogue Free

Highest Price paid for BEESWAX

F. W. JONES - BEDFORD, QUE.

STRAWBERRIES

Your copy of our Strawberry Catalogue is now ready. A Post Card will bring it. It describes all the best varieties of Strawberries and Raspberries. Cultural directions and lots of other valuable information.

THE LAKE VIEW FRUIT FARM
H. L. McConnell & Son Grovesend, Ontario

COMB FOUNDATION

Write for our prices before getting your wax made up. We can please you. Wax taken in exchange at market prices.

LEWIS MINOR, SMITHVILLE, ONT.

THE BEEKEEPERS' REVIEW CLUBBING LIST

The Review and Gleanings one year, \$1.50.
The Review and American Bee Journal one year, \$1.50.

All three for one year only \$2.00.
Canadian Subscribers add for postage as follows: *Gleanings*, 30c.; *A. B. J.*, 10c.

Address

THE BEEKEEPERS' REVIEW, North Star, Mich.

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FIRST CLASS FRUIT TREES

Two year old, 3 to 5 ft. high. To introduce our stock will sell while they last at \$20.00 per 100, \$2.50 per 10. All varieties of Plums, Pears, Peaches, Cherries and Apples. Special prices to Associations.

W. P. POWE & SON - CAINSVILLE, ONT.

QUEENS

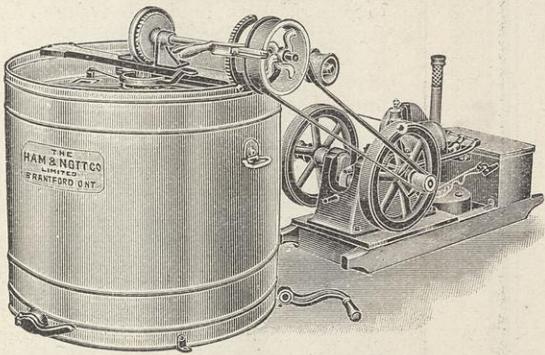
Bred from Doolittles best Italian stock. It is to your advantage to order now.

ONE DOLLAR EACH

The bees from my breeding queens are very gentle and good honey gatherers.

P. TEMPLE
438 Gladstone Ave. - Toronto, Ont.
Safe arrival guaranteed

POWER HONEY EXTRACTORS



(6 Frame L. Extractor with 1 $\frac{1}{2}$ H. P. Engine)

Cut Gears, Heavy Steel Brake, Removable Comb-Baskets

This outfit combines Simplicity, Strength and Efficiency

WRITE

THE HAM & NOTT COMPANY
LIMITED
BRANTFORD, ONT.

Apple Shippers

Read this before disposing of your Apples



IT'S ONLY NATURAL to give your own property **THE PREFERENCE** — Blood is thicker than water.

Having no bought apples of our own, we are in a position to look after your interests. Consign we can take care of them for you.

Have ample storage to hold for improved market.

Dawson - Elliott Co.

32 West Market St., TORONTO
PHONE MAIN 1471

PEERLESS POULTRY FENCE

Does all you could wish of a poultry fence and more. Built close enough to keep chickens in and strong enough to keep cattle out. Even small chicks cannot get between the close mesh of lateral and vertical wires. The heavy, hard steel top and bottom wires, together with intermediate laterals, will take care of a carelessly backed wagon, or an unruly animal and spring back into shape immediately. The wires are securely held together at every intersection by the PEERLESS Lock.

The Fence That Saves Expense

It never needs repairs. It is the cheapest fence to erect because, owing to its exceptionally heavy top and bottom wires, but half the usual amount of lumber and posts are required.

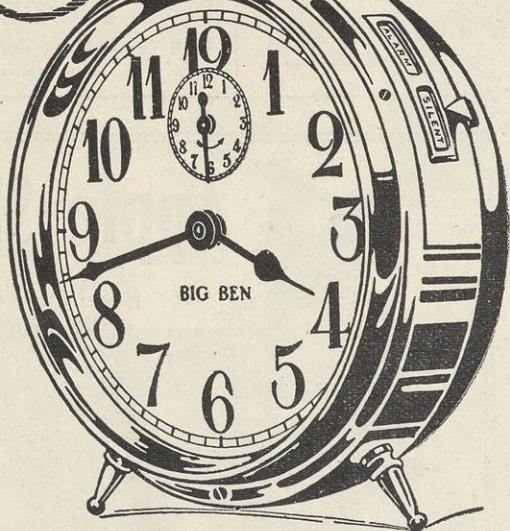
Send for Literature

and address of nearest agent. We also make a complete line of farm and ornamental fencing. Agents nearly everywhere. Agents wanted in unassigned territory.

Banwell Hoxie Wire Fence Co., Ltd.
Winnipeg, Manitoba

Hamilton, Ontario

Big Ben



He's Big All Over And Good All Through

Big Ben is built for *endless* service. He has no "off-days," no shut-downs. His four years of existence have been one long record of on-the-dot accuracy. 7,000 Canadian dealers say that he does more *efficient* work for less pay than any other clock alive.

A Big Ben battalion, over 3,000 strong, leaves La Salle, Illinois, every day. Their sparkling triple nickel-plated coats of implement steel; their dominating seven-inch height; their big, bold, black, easy-to-read figures and hands; their big, easy-to-wind keys—all make Big Ben the world's master clock.

In return for one little drop of oil, he'll work for you a full year. From "Boots on" to "Lights out"—365 times—he'll guarantee to tell you the

time o' day with on-the-dot accuracy.

He'll guarantee to get you up either of **TWO WAYS**—with one long, steady, five-minute ring if you need a good big call, or *on the installment plan*, with short rings one half-minute apart for ten minutes, so you'll wake up *gradually*, and he'll stop short in the middle of a tap during *either* call if you want to shut him off.

Big Ben is a mighty pleasant looking fellow. His big, open honest face and his gentle tick-tick have earned him a place in thousands of *parlors*.

The next time you go to town call at your dealer's and ask to see Big Ben. If your dealer hasn't him, send a money order for \$3.00 to his makers—Westclox, La Salle, Illinois—and he'll come to you prepaid.

British Columbia

The fruit growers of the Okanagan district were encouraged by the reports presented at the recent annual meeting of the Okanagan United Growers' Limited. They showed a balance on hand on December 31, 1913, of \$21,400. The total shipments through the central body up to December 31st included five hundred and forty-one cars of fruit valued at three hundred and twenty-two thousand five hundred and sixty-three dollars. The operating expenses charged to the Central Organization totalled four decimal four per cent., including the sum of five hundred dollars, which had been set aside to offset possible bad debts and similar charges. To this should be added the brokerage charges, amounting to two decimal forty-three per cent., making the total operating expenses of the Central Company six decimal eighty-three per cent. The reserve fund amounted to twelve thousand three hundred and sixty-seven dollars, which will be returnable to the shareholders after three years at four per cent.

The strongest competition the company had to meet was furnished by the North Pacific Fruit Distributors, representing the four States of Washington, Oregon, Idaho and Montana, which maintained about thirty wholesale fruit houses in the Canadian west, on whose behalf two large brokerage firms were operating. The United Growers Limited early in the season arranged to sell much of its product to the Mutual Brokerage Company of Calgary.

The company expects to make considerable improvements in its business arrangements this year. These include an estimated saving of four thousand dollars in the purchase of box material and one-half cent a pound on all wrapping paper needed. Arrangements are in progress for the purchase of vegetable seeds from an association in Ontario which will effect a great saving.

Niagara District

A series of very successful meetings was held the first of March by the Niagara Peninsula Fruit Growers' Association. Meetings were held at Grimsby and St. Catharines. The speakers included Dr. H. A. Surface, of Harrisburg, Pa., who gave several excellent addresses. Extracts from one of these addresses appear elsewhere in this issue. A report of a second address will be published later.

Prof. R. Harcourt of the Ontario Agricultural College spoke on "The Most profitable Commercial Fertilizers for the Orchard." Mr. W. T. Macoun, Dominion Horticulturist, spoke on "The Best Varieties of Strawberries" and "The Influence of Chemistry on Fruits and Fruit Growing," as well as several other subjects. For a commercial plantation of strawberries, Mr. Macoun recommended Senator Dunlap, Glen Mary, Parson's Beauty, William Splendid, Warfield, and Grenville. For raspberries he recommended the Marlboro for early and Cuthbert for the main crops, with Herbert as a special for the colder parts of the province.

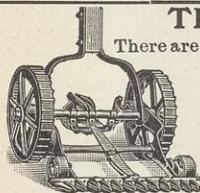
Prof. W. W. Farnsworth, of the Ohio Agricultural College, spoke on the general management of the orchard. Mr. W. A. McCubbin was another speaker. The meetings concluded with the holding of a banquet in St. Catharines, which was largely attended and most successful.

Spraying intelligently done will control all the orchard insects in the district.—S. E. Todd, Lake Huron District, Ont.

Parks, Gardens, Lawns Planned and Planted

Expert Advice

CHARLES ERNEST WOOLVERTON
Landscape Gardener, GRIMSBY, Ont.



THE CLIPPER

There are three things that destroy your lawns—Dandelions, Buck Plantain and Crab Grass. In one season the Clipper will drive them all out. Your dealer should have them—if he has not drop us a line and we will send circulars and prices.

CLIPPER LAWN MOWER CO.
Box 10, Dixie, Ill.

THIS WASHER MUST PAY FOR ITSELF.

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse, but, I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said "All right," but pay me first, and I'll give you back your money if the horse isn't all right."

Well, I didn't like that. I was afraid the horse wasn't "all right" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now, this set me thinking.

You see I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself, lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it.

But I'd never know, because they wouldn't write and tell me. You see I sell my Washing Machines by mail. I have sold over half a million that way. So, thought I, it is only fair enough to let people try my Washing Machines for a month, before they pay for them just as I wanted to try the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in Six Minutes. I know no other machine ever invented can do that, without wearing the clothes. Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it don't wear the clothes, fray the edges, nor break buttons, the way all other machines do.

It just drives soapy water clear through the fibres of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight, too. Surely that is fair enough, isn't it?

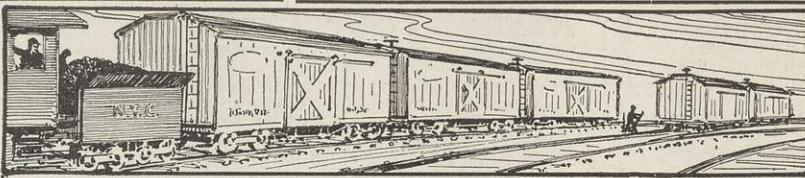
Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that in washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 50 cents a week 'till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line to-day, and let me send you a book about the "1900 Gravity" Washer, that washes clothes in six minutes.

Address me personally:

K. G. MORRIS, Manager, 1900 Washer Co., 357 Yonge St., Toronto, Ont.



Why Not Cut Off the Two Cars of Filler?

It takes 400,000 cars to carry American Fertilizers to our farmers and planters every season. Forty per cent.—2 cars out of 5—of this stuff is Filler, which requires 160,000 cars! Order less filler, higher grade and

Nitrate of Soda

for your active Nitrogen and save freight bills.

The greater productive capacity of high-grade fertilizers without so much filler means a greater outbound tonnage for railroads and greater purchasing power for farmers, so that railroads and everybody would be benefited.

DR. WM. S. MYERS, Chilean Nitrate Propaganda
NO BRANCH OFFICES
25 Madison Ave., New York



Seeds with a Lineage

Lovers of gardens and grounds should know that at Raynes Park, London, England, Messrs. James Carter & Co. have the finest and most complete testing and trial grounds in the world.

Their equipment and the unique methods employed guarantee the quality of their seeds. For generations they have been cultivating, selecting and perfecting until Carters Tested Seeds have reached the highest percentage of purity and germination.

In England, where the art of gardening is most highly developed, Carters Seeds rank first. Ask any gardener with experience in Great Britain—he will know Carter.

In Canada, Carters Seeds have achieved a tremendous success, both on large estates and in smaller gardens.

We import these seeds direct from Raynes Park and carry a complete stock at our Toronto warehouse. We issue an American Catalogue, with all prices in American money. It includes selected varieties of Flower and Vegetable Seeds, with valuable directions for planting and cultivation.

A copy of this Catalogue will be mailed you FREE. Write for it to-day.

Carters Tested Seeds

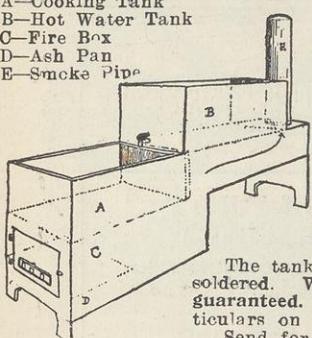
If you are interested in upkeep of Lawn, Tennis - Courts, or Golf - Course, write for the "Practical Greenkeeper." Every Championship Golf - Course in America is to-day using Carters Tested Grass Seeds.

CARTERS TESTED SEEDS, Inc.
133 A King Street, Toronto



SEEDSMEN BY ROYAL WARRANT
HIS MAJESTY KING GEORGE V

A—Cooking Tank
B—Hot Water Tank
C—Fire Box
D—Ash Pan
E—Smoke Pipe



Make Your Own Spray

Home Boiled Lime Sulphur is being used in increasing quantities by leading fruit growers and fruit growers' associations. They find that by making their own spray they can effect a considerable money saving, and at the same time produce a preparation that will do the work thoroughly.

It is an easy matter to make home boiled lime sulphur. The chief essential is a proper spray cooker. We manufacture two kinds of cookers, one with a single tank, and one with a double tank. (See illustration.) They are designed especially for this purpose, and will give the greatest efficiency with the greatest saving of fuel. They can be used for either wood or soft coal.

The tanks are made of heavily galvanized steel, thoroughly riveted and soldered. Will not leak. They are built to give satisfaction, and are guaranteed. Made in five sizes, capacity 30 to 75 gals. Prices and full particulars on application. Get your outfit now. Write us to-day. Send for pamphlet illustrating the finest pruning saw on the market.

STEEL TROUGH & MACHINE CO., Ltd., TWEED, Ont.

Dollar-Saving Facts

Before buying any fence, consider the following points carefully: Then you'll discover why so many shrewd farmers declare the

“Frost Fence”

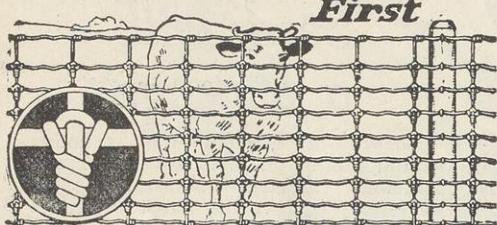
Canada's Best Fence, worth more than it costs

We manufacture every inch of wire woven into FROST FENCES in our own mills right here in Hamilton.

Therefore we know the *Quality* of both Laterals and Stays.

Our process of galvanizing is thorough and assures a thick, even coat--so we can guarantee it to be free from the

Frost Fence First
corrosive and destructive influence of varying climatic conditions.



The Laterals are deeply waved in the making -- hence we can guarantee that heavy spring, the come-back qualities

for which the FROST FENCE is famed.

The Stays, you will see, are straight and uniformly spaced. That's the reason why we can guarantee *even distribution of strain*.

The Tie Wire is wrapped around both Laterals and Stays several times, making a permanent lock--a double surety of strength and lastingness.

Examine fences every chance you get--Study the FROST FENCE in particular--Then, when you buy, you'll make a good investment.

If you do not know the FROST FENCE man, write us--we may need an agent in your locality.

51

Frost Wire Fence Co. Limited
HAMILTON • ONTARIO

Annapolis Valley Notes

The United Fruit Companies have made arrangements with a local newspaper to edit and publish one page each week under the name of the Cooperative News. The name of every member in the local companies is on the lists, and in this way the central body is kept closely in touch with the members. Part of the space each week is given up to a report on the condition of the apple market, prices, and similar information. From time to time articles of an educational nature pertaining to fruit growing are printed. Before this the majority of the growers did not know what was being done, and were easily deceived by interested parties, thus causing dissatisfaction with the management.

Apple prices are still a little stronger, ranging from two to five dollars a barrel, according to grade and variety. The quality of the late winter apples is excellent. Fruit growers are beginning to realize that there is a market for their more tender varieties packed in boxes.

The agents for power sprayers are doing a rushing business, as the experiences of the past two seasons have about convinced the fruit grower that it is either spray well or look to some other line of farming for his living. In fact, the orchardist who does not spray to-day should be ashamed to look a full grown tree in the face.

The duty on basic slag, which came in force this winter, is a serious tax on the farmers of this Valley. On the order of the United Fruit Companies alone the duty means all of three thousand dollars extra charge. Almost as many tons of slag are now bought as all other kinds of fertilizer taken together. Uplands that would not yield one half ton of hay to the acre, are by the application of eight hundred pounds of slag made to grow clover most luxuriantly. By using vetches as a cover crop, and putting on a dressing of slag every few years, apples can be grown with no other expense for fertilizer. After seeing how this and other fruit grower raw materials are taxed, anyone with a sense of humor must have the face ache who reads in his morning paper that the Government have appointed another commission to find out the reason for the high cost of living.

—M.K.E.

Eastern Annapolis Valley

Eunice Buchanan

Early last spring I put some apple twigs in water in order to watch the flowers develop, but they hatched out aphids and the flowers were sickly. I remarked that these insects would be troublesome in the summer, but I had no idea that they were going to be as bad as they were. This year I do not see any sign of aphids on the shoots in the house which will shortly be in blossom. By the way, lilac shoots will well repay the trouble of placing them in water if the flower buds are selected.

Farmers' meetings to discuss spraying are to be addressed between March 16th and 21st in eight different centres of King's county. Addresses will be given by Messrs. Woodwirth and Robinson.

During the week ending March 7th, 7,972 barrels of apples were shipped from Nova Scotia to England; of these 7,263 were shipped by the United Fruit Companies. Prices for Ben Davis and Nonpareils were very good.

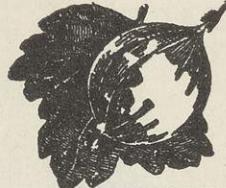


Write for Free Book on Spray-ing 300,000 use these won-derful sprayers to rid fields, fruit trees, gar-dens of blight, disease and insects—to make all pro-duce big. Auto Spray No. 1—Capacity 4 Gallons. Auto Pop Nozzle throws from fine mist to drenching stream. Does not clog. 40 styles and sizes of Hand and Power Outfits. Large sprayers fitted with

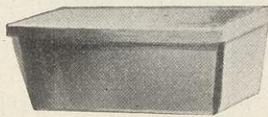
Non-Clog Atomic Nozzle
only nozzle that will spray any solution for days without clogging. Fits any make of sprayer. Write for valuable Spraying Guide Free.

The E. C. Brown Co., 57 JAY ST., ROCHESTER, N. Y.

Brown's Auto Spray



SUPERIOR Plant Boxes



PRICES RIGHT

Delivery in March and April. Order NOW to ensure prompt shipments.

Canada Wood Products Co.
ST. THOMAS - ONT.



EWING'S RELIABLE SEEDS

Reproduce the Choicest Stock

"Like produces like".

Given proper soil and care, Ewing's Seeds will reproduce, in your own garden, before your delighted eyes, the choice, selected vegetables and flowers from which they themselves grew.

Breeding counts in plants as well as in animals, as Ewing's "pure-bred" seeds have been demonstrating by splendid crops for over forty years.

Start right—plant Ewing's Reliable Seeds—and get the most out of your garden. Write now for our Illustrated Catalogue, and if your Dealer hasn't Ewing's Seeds, order from us direct.

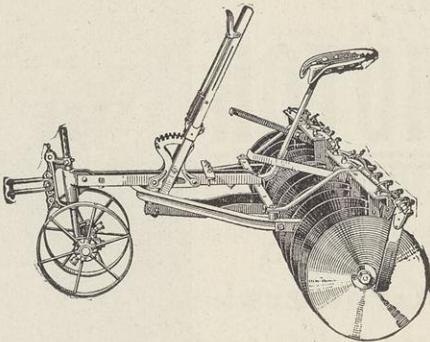
THE WILLIAM EWING CO., LIMITED,
Seed Merchants. McGill Street, Montreal.

SMALL FRUIT PLANTS

Gooseberries. Josselyn! Josselyn!! Red Jacket, Downing, Pearl, Houghton.—Currants, Perfection! Perfection!! Ruby, Cherry, White Grape, Lee's Prolific, Champion, Black Naples, Black Victoria, Bos-coop.—Raspberries. Herbert! Herbert!! Herbert!!! Cuthbert, Marlboro, Brinckle's Orange, Golden Queen, Strawberry-Raspberry. — Garden Roots, Asparagus, Rhubarb. Write for Catalogue.

WM. FLEMING, Nurseryman, 496 - 4th Avenue W., OWEN SOUND, ONT.

Deering Tillage Implements



The IHC Line

GRAIN AND HAY MACHINES
Binders, Reapers
Mowers
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CORN MACHINES
Planters, Binders, Cultivators
Ensilage Cutters
Shredders
TILLAGE
Combination, Peg and Spring-Tooth, and Disk Harrows
Cultivators
GENERAL LINE
Oil and Gas Engines
Oil Tractors
Manure Spreaders
Cream Separators
Farm Wagons
Motor Trucks
Threshers
Grain Drills
Feed Grinders
Knife Grinders
Binder Twine

WHEN disked with a Deering disk harrow the ground is so prepared that it stores away and holds the moisture from snow and early rains, liberating it to the roots of your growing crops at the time when they need it most.

Deering disk harrows are built to do this work as it should be done. The frame is strong enough to stand up under the strain of penetrating and pulverizing hard ground. The bearings are as nearly dust and dirt proof as disk bearings can be built.

The full line includes every style of disk and smoothing harrow and the best line of drills and cultivators built. See the Deering local agent for full information about the line, or send to us for catalogues.

"The Disk Harrow," a book which illustrates and explains the proper preparations of a seed bed, and gives examples of the value of disking—32 pages of valuable information—is yours for four cents to cover postage and packing. Write for it.

International Harvester Company of Canada, Ltd.

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ST. CATHARINES, ONT.

Transportation Problems*

C. E. McIntosh, Forest, Ont., Transportation Agent, Ontario Fruit Growers' Association

ONE outstanding fact in regard to express rates is this—while the Dominion Express Co. has running rights over practically two-thirds of the railway mileage in Canada, some of our most extensive fruit districts are served only by the Canadian Express Co., and these shippers are compelled to pay rates greatly in excess of those from non-competitive points.

To outline just how this affects the shipper from a non-competitive point, take, for instance, shipping points in the Niagara Peninsula, west to Berlin, north to Streetsville, the local commodity express rate on fruit to Winnipeg is \$2.65 per 100 lbs. From the Leamington and Essex district and from Sarnia and other points where two express companies operate, the rate is \$2.90. Exclusive points, however, have been paying enormously high rates, such as from Forest, where only the Canadian Express Co. operate, twenty-three miles less haul than from Sarnia, the rate was \$4.20. This was brought to the attention of the Express Co. officials, and they issued a tariff June 7th, 1913, allowing these exclusive points the \$2.65 or \$2.90 rate plus 30 cents in the former and 35 cents per 100 lbs. in the latter instances. There are many complaints of high express rates to points within the province; but this matter has not yet been presented to the Express Companies.

REFRIGERATOR CAR REQUIREMENTS

An effort was made to get an estimate of refrigerator cars that the fruit shippers would require last fall, at the different shipping points, with a view to supplying the different railway car distributors with the requirements for each division, between certain dates. I regret to say only thirty-three shippers responded to our request for the information. These were, however, compiled and sent to the proper officials, from whom a reply was received stating information was of great assistance in arranging for the supply. I have reason to believe the greater portion of these thirty-three shippers requiring 692 cars, between October 24th and November 10th, received much better service than they would otherwise have received. With this information the railways could better estimate their requirements, and they had promised to cooperate with us in an effort to improve the conditions of last year. The shippers were not mindful of their own interests in this matter, but I hope when occasion again demands they will be prompt, and be more unanimous in their response.

L. C. L. FREIGHT SHIPMENTS

Another matter of a monetary benefit to some fruit shippers in some districts was an arrangement made with railway representatives, whereby L. C. L. shipments were carried on freight rates instead of by express on the same train. For instance, in the Lambton district, the shippers at Forest and Thedford were shipping to Stratford at an express rate of 50 cents a 100 lbs. and London, 60 cents a 100 lbs. on a mixed train. It was my privilege to take this up with the divisional agent at Stratford, and he consented to placing a car for 6,000 lbs. minimum at a rate of

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is the most efficient spraying machine made, because it has twenty distinct patented features to be found on no other make. We have been at the making of spraying machines for over twenty years, devoting all our thought and energy to the perfecting of the Spramotor. We manufacture every part that goes into our machines, in order to be sure that each is perfect. Every outfit gets a thorough test under high pressure before being shipped.

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FREE

Send us a letter containing some idea of your spraying requirements and we will mail at once full particulars of a Spramotor that will do your work to best advantage at the lowest possible cost. We will also forward a copy of our valuable illustrated treatise on Crop Diseases, WITHOUT CHARGE and without placing you under any obligation whatever.

SPRAMOTOR WORKS

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*Extract from a report presented at the last annual meeting of the Ontario Fruit Growers' Association.

EXPERIMENT on ONIONS conducted by
Geo. S. Chapman, Lorne Park, Ont.



Fertilizers Applied Per Acre	Muriate of Potash	Plots I	II	III
	Acid Phosphate	-	160 lbs.	-
	Nitrate of Soda	-	500 lbs.	500 lbs.
		-	200 lbs.	200 lbs.

Order Your POTASH At Once

The Potassic and Phosphatic Fertilizers should be applied as soon as the land is workable.

Many disappointments with fertilizers are due to the fact that they have been applied too late for the crop to get full benefit from them in the first season. Remember that fertilizers are not used up in the first season, but are effective for several seasons. Nitrate of Soda should generally be applied as a top-dressing at planting time. Slower acting Nitrogenous fertilizers can be applied earlier with the other materials.

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can be obtained from the leading fertilizer dealers and seedsmen.

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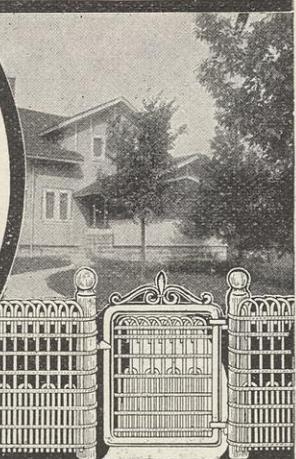
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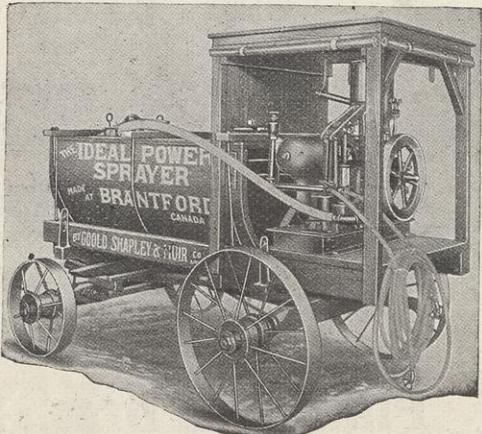
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Catalogues describing our different lines, sent on request

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22 and 24 cents respectively. The service was used to good advantage because the shipper or shippers did the handling, received the same despatch, and saved 28 and 26 cents a 100 lbs. respectively on their shipments.

Where similar conditions exist, if shippers would report to the committee or myself, it would receive attention.

These are some of the matters which received the attention of the Transportation Committee and myself during the past year. The concessions granted have been made possible by your assistance in furnishing records, and just here may I express the necessity of keeping the records asked for from time to time by circular. The power under which your committee can work successfully is in your hands. We must have these facts well substantiated; it only remains, then, for you to make this keeping of records one of the first things attended to on each shipment. I want to assure you that railway companies are beginning now to realize that the Ontario Fruit Growers Association is a body alive to their rights, and can substantiate a request with something behind it. Evidence which you shippers can produce will demand a hearing at any time, and I sincerely hope if this work continues your committee will have the co-operation of every shipper in the province.

The Brown Tail Moth

In an open letter published in some of the Nova Scotia papers, Dr. C. Gordon Hewitt, Dominion entomologist, deals with the Brown Tail Moth infestation in that province in part as follows:

The serious character of this insect as a pest of fruit and shade trees, and as cause of physical discomfort and possible illness owing to the poisonous nature of the hairs of the caterpillar, needs no emphasizing, as most of our readers will be acquainted with the experiences of the New England States in regard to this insect and the Gipsy Moth.

The Dominion and Provincial Departments of Agriculture are making every possible effort to keep the insect in check by collecting the winter webs or nests on the trees, each of which webs contains on the average about two hundred and fifty young caterpillars. On this work a body of ten inspectors employed by the Dominion and Provincial Governments, is engaged, and they are covering the whole of the infested territory. Owing to an enormous flight of moths which were blown across the Bay of Fundy from Maine in July, 1913, the infestation has been very greatly increased. With the annual increase of the infestation in Maine we may expect a recurrence of such a re-infestation by wind-carried female moths in the future, and it is therefore more than ever necessary to call the attention of the owners of orchards and trees to the requirements of the law in this regard.

The conditions in Nova Scotia are such as to demand the strict observance of the law. While the respective governments are leaving no stone unturned, the duties of their officers are to inspect, and the fact that they are collecting the webs on infested premises does not relieve the owners of such premises of the necessity of conforming with the regulations, and taking steps to eradicate the Browntail Moth when the same occurs in their premises.

Orders have been issued to the inspectors to instruct the owners of properties on which the Browntail Moth has been found in any abundance to spray their trees thor-

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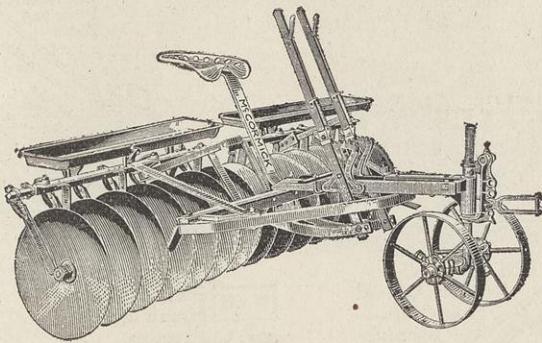
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Proper use of a disk harrow means the purchase of a McCormick disk harrow because they are the ones built to do the best work. The frames are strong, to stand the strain of following the binder or of disking hard ground. The set levers keep the gangs to their work at even depth. The bearings are the most durable that can be put on a disk harrow.

The full line includes disk, peg tooth, and smoothing harrows, drills and cultivators. See this line before you buy. We send catalogues on request.

"The Disk Harrow," a book which illustrates and explains the proper preparation of a seed bed, and gives examples of the value of disking—32 pages of valuable information—is yours for four cents to cover postage and packing.

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Planet Jr Double Wheel Hoe, Cultivator, Plow and Rake



The greatest cultivating tool for the grower of garden crops from drilled seed. It has steel frame. Light enough for woman's use. A favorite with onion growers.

Exterminating the Scale*

Prof. W. H. Brittain

The work of inspecting orchards for the San Jose Scale, that was continued during 1913, began June 2nd last, and continued throughout the season, with six to ten inspectors employed in the work. Beginning at Windsor, all the orchards as far west as Digby were inspected. The inspectors were then placed in Hants County and worked eastward into Halifax and Colchester counties. As a result of the inspection fifty-seven trees were found infested with living scale as compared with seven hundred and twenty-three the previous season. Of these fifty-seven, six were the 1911 planting, forty-five of the 1912 planting, and six of the 1913 planting.

In addition to the scale work the inspectors gathered some valuable data as to the number of orchardists who spray and the acreage sprayed, in comparison with the total area. This information has been tabulated according to counties and makes very interesting reading.

Though I would not wish to predict that the San Jose Scale has now been wiped out of Nova Scotia, for such predictions are always unsafe, I can at least safely say, that in no country of which I am aware has this pest after having become so widely distributed been brought so nearly to the point of extermination. Though I do not wish to magnify the seriousness of this pest, and am very far from saying that its establishment in Nova Scotia would sound the death knell of the fruit growing industry of the province, it would increase the cost of production, which is already sufficiently high. It would cost the country, at a conservative estimate, about fifty-five thousand dollars. When you consider that by spending about four thousand dollars a year by the government, we stand a very good chance of keeping it out entirely, you will see that a very large profit accrues to the people.

At present we are concentrating our energy in keeping out all infested trees. We are increasing our facilities at the port of entry so that all incoming stock will be given a searching inspection, in addition to fumigation, before it is allowed to enter the province. Of course we do not have control of the stock coming in from the United States and other country, but I am assured by the Dominion Government authorities that they are taking all necessary precautions. By these methods we hope to keep this pernicious pest forever outside our borders.

Nova Scotia

A four days' packing school was held at Kentville, beginning February 24th, under the auspices of the College of Agriculture, Truro. The local arrangements with regard to all necessary equipments for the work were looked after by Prof. W. S. Blair and staff of the Kentville Experiment Station. Dominion Fruit Inspector P. J. Carey of Toronto had charge of the work. The actual packing of apples in boxes and barrels along modern lines was taken up. Great interest was shown. The attendance was very large.

As a result of the benefits derived from the demonstration, it is intended that packing schools shall be conducted next season at different points all through the valley. More and more box packing will be done hereafter throughout the Valley.

*Extract from an address given before the last annual convention of the Nova Scotia Fruit Growers' Association.

Don't Feed the Soil — Feed the Plant

In the top eight inches of average soil there is enough plant food in the form of nitrogen to last for 90 years, in phosphoric acid for 500 years and in potash for 1000 years.

And yet that very spot may prove barren. Plants have to take up their food in solution, in the "sap of the soil." All this food may be locked up so tightly by nature that the plants can't get at it fast enough for the commercial farmer, and he has to put in the same food in the soluble form of fertilizer.

Just so, a fertilizer may, by analysis, have all the necessary elements and yet not give the plant full value because these elements are not ready soluble.

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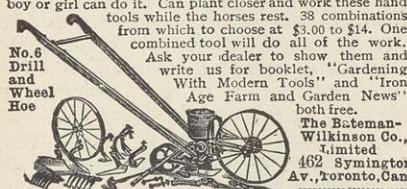


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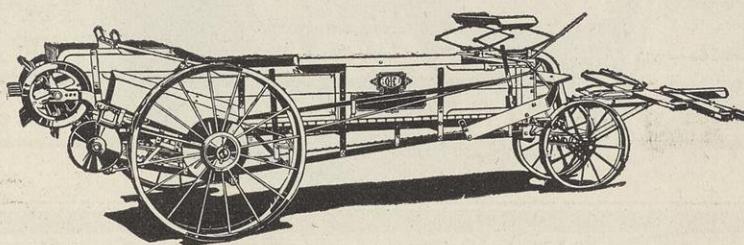


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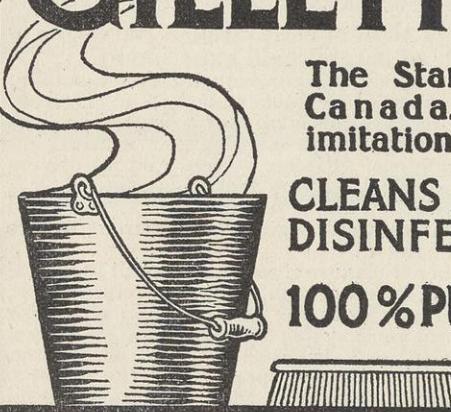
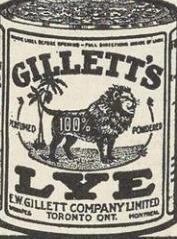
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The Standard Lye of Canada. Has many imitations but no equal

CLEANS AND DISINFECTS 100 % PURE

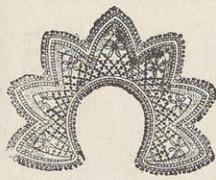
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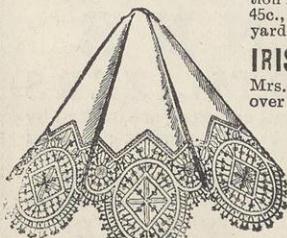
This is the old-fashioned lace made on the cushion, and was first introduced into England by the Flemish Refugees. It is still made by the village women in their quaint old way.

Our Laces were awarded the Gold Medal at the Festival of Empire and Imperial Exhibition, Crystal Palace, LONDON, ENGLAND, for general excellence of workmanship.

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DAINTY HANDKIE—70.
No. 910.—Lace 1 1/4 in. deep.

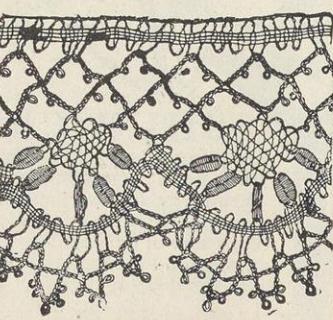
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Mrs. Armstrong having over 100 Irish peasant girls connected with her industry, some beautiful examples of Irish hand-made laces may be obtained, All work being sold direct from the lace-makers, both the workers and customers derive great advantage.

Every sale, however small, is a support to the industry.



(1 1/4 in. deep.) STOCK—Wheel Design.
Price 25c. each. (Half shown.)



No. 122.—30c. per yard.

MRS. HORACE ARMSTRONG, OLNEY, BUCKS, ENGLAND

The Export Trade in Pears and Peaches*

Mr. Harrison Watson, Canadian Trade Commissioner, London, E.C.

A FEATURE of the autumn fruit trade has been the record supplies of Canadian pears which have come to hand, and there have also been several shipments of peaches. Although the extremely high prices realized have been due to exceptional circumstances, there seems to be no reason why a profitable trade should not be maintained in the future.

The well known firm of Messrs. W. Dennis & Sons, Ltd., of Covent Garden Market, who have handled considerable supplies of both Canadian pears and peaches, acceding to my request, have been good enough to draw up a report which reviews the chief features of the trade which have come to their notice, and also contains several practical suggestions. This report is hereby reproduced for the information of Canadian growers and shippers:

"The prospects are promising for a lucrative and extensive business in the future, but the past season being in many respects abnormal, is not a good basis for generalizations as to the future.

HIGH PRICES OBTAINED

"The season for Canadian pears commenced at a very favorable time for the realization of high prices. The English and French crops were practically failures, and the sprinkling of Californian and Hudson River pears which had come forward had left the demand unsatisfied. Under these circumstances, we were able to return to the shipper highly satisfactory prices for the first arrivals, and had the fruit continued to come forward in good hard green condition, prices would have been maintained at a high figure for the whole of the season. Unfortunately towards the middle of the season it became apparent that the greater part of the fruit arriving was over-ripe, which state of affairs continued for the rest of the season.

"The early varieties, principally Bartletts, were in by far the most satisfactory condition on arrival, and the strength of the demand for good pears at the commencement of the season is illustrated by the first parcel of Bartletts we handled, which came forward in barrels and were found to be in excellent condition. These we were able to sell at 50s per barrel for the first grade, and 45s per barrel for the second grade, prices which we believe continued a record.

"The largest part of the arrivals of Bartlett pears from Canada, however, were packed in half-boxes, which realized satisfactory prices right through, ranging from 6s to 9s 6d, for sound fruit of the first grade, whilst for one parcel of fruit packed in a patent package which we shall hereafter describe, realized 11s per half-box. The half-box averaged in weight about 29 lbs. gross. Boxes of Bartletts, for which we realized up to 12s 6d, were only a small proportion of the arrivals.

SHIPMENTS IN BARRELS

"As regards stocks (other than Bartletts) we cannot report altogether favorably, for whilst very good prices were realized for some parcels of fine hard green fruit, these were few and far between, and most of the arrivals, if not actually wet and running, were too ripe for profitable marketing. Consequently prices ruled lower than the

*From a report to the Department of Trade and Commerce, Ottawa, Ont.

(Continued on page xi)

Roses Roses

Irish, Dutch and American. Hybrid Perpetual, Hybrid Teas and Climbing. Strong 2 year field-grown bushes that will bloom the first year—none better, none cheaper.

ALSO

Trees, Shrubs, Vines, Perennials

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We are able to make this great offer on
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been made in the cost of postage.

Here Are a Few of the Reasons Why You
Should Buy the Rapid Vacuum
WASHING MACHINE.

1—It is the only machine that has a valve
which is absolutely necessary to create a
vacuum, and supply the compressed air,
which forces the water through the clothes.

2—It is the lightest machine made.

3—It has been awarded prizes in washing
competitions over \$50 washing machines.

4—It will wash the heaviest Hudson Bay
blankets in 3 minutes.

5—It will wash
the finest lingerie
perfectly in 3 minutes.

6—It will wash
a tub of anything
washable in 3 minutes.

7—It will last a
lifetime.

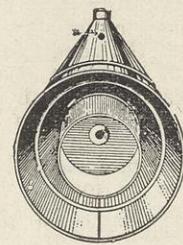
8—It will save
you hours of
needless toil.

9—It will save
many dollars a
year by not
wearing out the
clothes.

10—It can be operated by a child as easily
as an adult.

11—It is as easy to wash with this machine
as it is to mash a pot of potatoes.

12—It will thoroughly blue a whole family
washing in 30 seconds.



13—It will do everything
we claim for it, or we will
return every cent of your
money.

14—It can be used in any
boiler, tub or pail, equally
well.

15—After use it can be
dried with a cloth in ten
seconds. Nothing to take
apart. Nothing to loose.

After you own one of these
washers the hardest part of
the work will be hanging out the clothes. If
for ANY reason you are not satisfied with the
RAPID VACUUM WASHER we will gladly
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No more boiling. No more rubbing.
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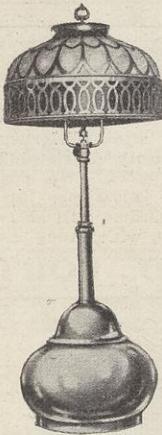
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Simple, strong, most
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when the saving of
oil alone will pay
for a "Faultless" in
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Write for free book-
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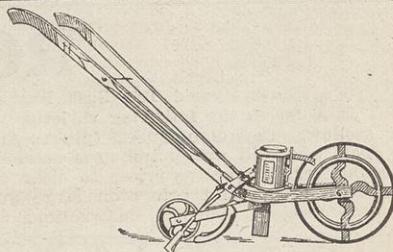
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are offering for sale a general assortment of
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Ornamental Shrubs, etc., at very low prices.
Our catalogues are just out. It will pay you
to send for one.

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"THE BEST BY TEST"

Garden Seeder

Does the work of two men in half the
time. Makes the drill, sows, covers and rolls
the seed while you walk.

No better seeder can be built for the
fast and accurate sowing of Turnips, Cab-
bage, Carrots, Beets, Corn and all other
garden seeds.

Price \$7.50 delivered at your station.

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STRENGTH-GIVING BREAD



If the men of the house have an extra call on their strength at
this spring season they should be fortified for it by having the best
of food three times a day.

As bread is the main item of every meal much depends upon its
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REINDEER FLOUR

The flour that will always produce an appetizing, satisfying and
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"HOME 65" FOOD CUTTER

is minced to perfection. Here too, is a machine which is quite
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**No Food Cutter works so easily or
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GLADIOLUS

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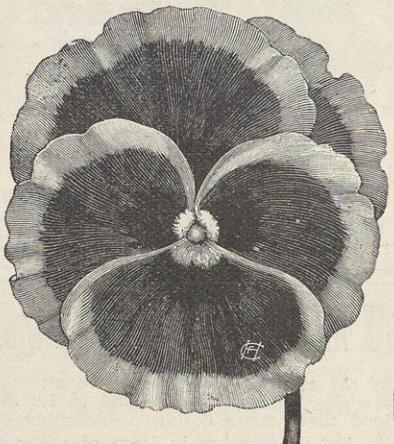
Williams Improved. Parson's Beauty, Splendid, Sample Fountain, Stevens, Champion, Senator Dunlap and other leading varieties. Write for catalogue and price list.

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11,000 splendid Hybrid Tea Rose Bushes, mostly two year old, will be ready for delivery about June 1st in the following varieties: White and Pink Killarney; Richmond (red); Hillington (yellow); Canadian Queen (pink); American Beauty (dark pink). Plants will have splendid roots and will make first-class summer bedding stock. We are offering this stock at the following very attractive prices to clear out quickly: \$10.00 per 100 on orders of not less than 25. Write for special prices on large quantities. Orders will be booked in the order in which they are received. Cultural instructions will be sent with every order.

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D. & F's HIGH GRADE VEGETABLE SEEDS

BEAN—A new, stringless, wax bean of great merit. Early, hardy, stringless, rust-proof and exceedingly prolific. Pkt. 10c, $\frac{1}{2}$ lbs. 20c, 1 lb. 30c.

BEAN—Stringless green pod. First introduced nineteen years ago. Still unequalled. Pkt. 10c, $\frac{1}{2}$ lb. 15c, 1 lb. 20c.

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CABBAGE—Copenhagen Market. Early as Jersey Wakefield and half again as large. Pkt. 10c, $\frac{1}{2}$ oz. 30c, 1 oz. 50c.

CORN—Golden Cream. Very early, very sweet and juicy. The best for home garden. Pkt. 10c, $\frac{1}{2}$ lb. 20c, 1 lb. 35c.

CUCUMBER—D. & F's extra long white spine. The most beautiful and best long green. Pkt. 10c, oz. 50c.

LETTUCE—D. & F's Peerless. Most distinct and largest solid cabbage lettuces. Pkt. 10c, oz. 30c.

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ONION—Cranston's Excelsior. Unsurpassed for exhibition purposes. Pkt. 25c.

PEA—World Record. Two weeks earlier than Gradus. Pkt. 10c, $\frac{1}{2}$ lb. 30c, 1 lb. 50c.

RADISH—White Icicle. Easily the best of all early white "Lady-Finger" Radishes. Pkt. 5c, $\frac{1}{2}$ oz. 15c.

TOMATO—D. & F's O.K. The best early bright red tomato. Pkt. 15c, $\frac{1}{2}$ oz. 75c.

D. & F's Exhibition Spencer Collection of Sweet Peas

Sometimes it is difficult for the amateur to intelligently select the best varieties of sweet peas from the seedman's list. The following names with their descriptions will be helpful:

King White, pure white; Clara Curtis, waved primrose; Elfrida Pearson, rose; Margaret Atlee, cream pink; Countess Spencer, select stock, large blush pink, waved; Thomas Stevenson, orange pink; Stirling Stent, orange salmon; Vermillion Brilliant, scarlet; Maud Holmes, crimson spencer; George Herbert, orange pink, deep rose wings; Nubian, chocolate; Margaret Madison, pale lavender; Asta Ohan, deep lavender; Tenant Spencer, purplish mauve; Elsie Herbert, blush white, picotee edge; Apple Blossom Spencer, waved rose and blush; Afterglow, bright violet blue; America Spencer, bright blood-red striped.

Special collection offer: one packet each of the above 18 varieties, \$2.75.

Send a postal for our new 1914 catalogue, the finest and most complete, listing only high-grade seeds.

DUPUY & FERGUSON

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MONTREAL, QUE.

Fruit Markets of the Future

The European representative of The United Fruit Companies of Nova Scotia, Limited, Mr. John N. Clute, in a recent letter to that company, reported in part as follows:

I am of the opinion that the development of our fruit industry should be along the line of quality rather than quantity. Within the next decade or two there will be strong competition in the fruit trade. England, with her cheap supply, and Oregon and other western states with their superior class of apple, will both be strong competitors with us for the English markets. We must not disguise the fact that the planting of orchards within the last ten years has been out of proportion to any previous period, and out of proportion to the development of the markets.

In England not only has the planting been extensive, but growers have adopted more scientific methods of caring for and marketing their fruit. I was forcibly impressed with this when attending the Kent fruit show at Maidstone this year. Although only their third annual show, there was a display of fruit that would do credit to any country. One thousand two hundred boxes of apples packed in scientific western style were arranged in a most attractive manner. There was also on show one hundred and forty-four barrels of apples. There was more competition in the Brambley Seedling than any other variety. The particular object of the show was to encourage packing apples for export. England has a large and growing export trade in apples with South America.

With these facts in regard to our competitors fairly before us, we must equip ourselves in the very best manner possible to meet the conditions. We must produce fruit of the best quality, handle it carefully, and pack it honestly and systematically. It must be put on the market in the very best condition possible, and that with the least possible expense.

There is too much difference between what we receive and what the English consumer has to pay. If we wish our apple trade to increase sufficiently to take the increased supply we must put in operation a system by which our apples can be procured by the consumer as cheaply as oranges or bananas. I am pleased to say that the United Fruit Companies have a scheme whereby expenses can be so reduced that the consumer can buy more cheaply and at the same time we, as growers, will receive more money for our fruit.

Recent bulletins and circulars that have reached The Canadian Horticulturist, include the following: Bulletin No. 241, issued by the Agricultural Experiment Station, Berkley, Cal., entitled "Vine Pruning in California." This bulletin is well illustrated, and deals among others with the grape vine. Bulletin No. 171 is being distributed by the Agricultural Experiment Station at Lafayette, Ind. It is entitled "The Vegetable Garden." Vegetable growers will do well to obtain a copy of it. "Peach Leaf Curl" and "Apple Growing in New Jersey" are the titles of two circulars, Nos. 29 and 30 respectively, being distributed by the New Jersey Agricultural Experiment Station.

Too many fruit growers forget that one spraying done at the proper time does much more good than two or three sprayings done at other times.—H. K. Revell, Northumberland Co., Ont.

Market Gardeners

It will pay you to look carefully over our Price List of

SEEDS

Ask for Special Prices on Garden Peas and Seed Corn.

Our Seeds will POSITIVELY, ABSOLUTELY, give you satisfaction.

Write us about your wants

Geo. Keith & Sons

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SPRAYERS

Are a Necessity and a Benefit.

Outside Pumps, Bronze Pipe, Valves, Hemp Packing. Easy to get at.

IRON AGE

They save your crop, increase the yield and improve the quality. Our Spray Calendar shows when to spray and what materials to use. Our "Spray" booklet shows 70 combinations of

Bucket, Barrel, Power and Traction Sprayers for orchard and field crops and other uses. Built complete or in units—buy just what you need. Ask your dealer to show them and let us send you our spray booklet, spray calendar and "Iron Age Farm and Garden News" free.

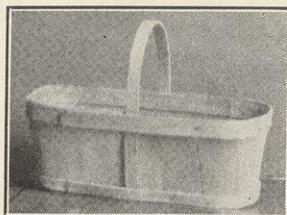
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Peerless

Climax Fruit Baskets



Heaviest, Strongest and Best

In the market. Especially suitable for long distance shipping. Last year the demand exceeded the supply

Therefore Order Early

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BEZZO'S FAMOUS PRIZE ASTERS

Prizes New York State Fair, Canadian National Exhibition, Toronto; Berlin Horticultural Society, 1910-11-12-13.

Violet King, Rose King, Royal White, Royal Lavender, Royal Pink, Royal Purple, Rochester Pink, Peerless Pink, Salmon Pink, Improved Oregon Pink, Queen of the Market White or Pink, Branching White, Rose, Pink, Lavender, Crimson, Mikado White. These are very truly the aristocrats of the Aster family. All plants sent by Express (unless otherwise arranged) to any part of Canada and guaranteed to arrive in good condition. Price, \$1.00 per hundred, packed and labelled separately in wet moss. Express prepaid on orders amounting to more than \$2.00. Special prices to Horticultural Societies. All plants cold frame (not hot-bed) grown, and with favorable weather will be ready last week in May. Order early as the quantity is limited.

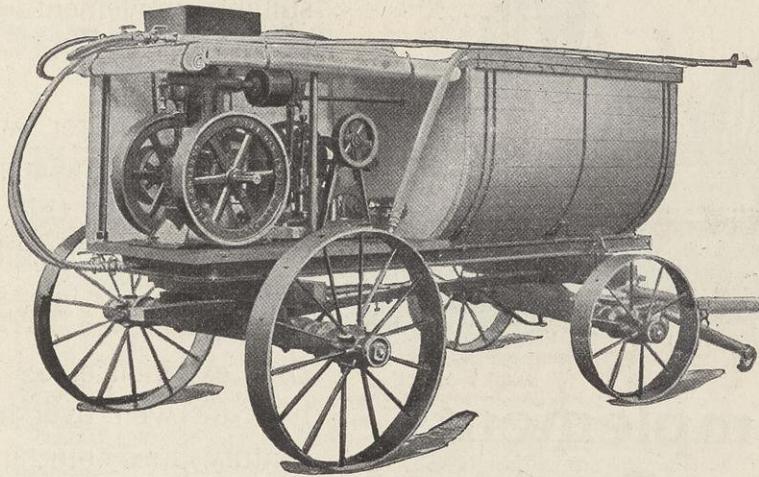
C. MORTIMER BEZZO

BERLIN, CANADA

"The Hardie Power and Hand Sprayers"

The Sprayer that is free from Experimental Risk

OVER 6,500 IN USE



"The Sprayer" (you are looking for) "With The Trouble Left Out"

CONSIDER WELL THE HARDIE FEATURES

SIMPLICITY OF CONSTRUCTION—Obtained by leaving out everything of a complicated or troublesome nature and using only such construction as experience has proven best.

STRENGTH—The liberal use of high grade steel and the use of metals which will stand the wear and tear of high pressure work.

BIG CAPACITY—Our pumps are properly designed and built by "sprayer specialists." We know the importance of lots of liquid at the nozzle and build accordingly.

HIGH PRESSURE—We use a powerful engine on our machines and our pumps are so light-running that high pressure can always be obtained.

Whether your orchard is large or small requirements, assuring you spraying success, with a

LIGHTNESS—By the use of a high carbon pressed steel frame we get strength and long service.

FROST-PROOF ENGINE—We use the Ideal engine. It is compact, strongly built and reliable. Plenty of power and always ready to run.

PRESSURE REGULATOR—A simple, reliable device to control the pressure. There is no load on the engine when the stop-cocks are off.

LITTLE THINGS—Stay-There hose ends which cannot be blown or pulled off. Angle cut-offs, a decided improvement over the old style stopcock. Hose, the kind that gives you the service you desire.

there is a Hardie Sprayer to fill your

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Hardie Hillside Triplex
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HARDIE HAND PUMPS—The world's best, so simple that the only tools required to keep them in perfect working order "are a boy and a monkey wrench."

There are now in use nearly 30,000 Hardie Hand and Power Sprayers. Our prices are lower than other machines of like specifications. Take advantage of our large output and the Sprayer Pump Value **BUY A HARDIE**. Write for our catalogue giving mechanical details of our full line.

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We advise you to build right, provide against wind storms, save all your stock from destruction and yourself from worry, produce and work under a glass roof that will insure your labours and crops, get PARKES MODERN GREENHOUSES.

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SHELF BRACKETS, PIPE CARRIERS, SPLIT TEES

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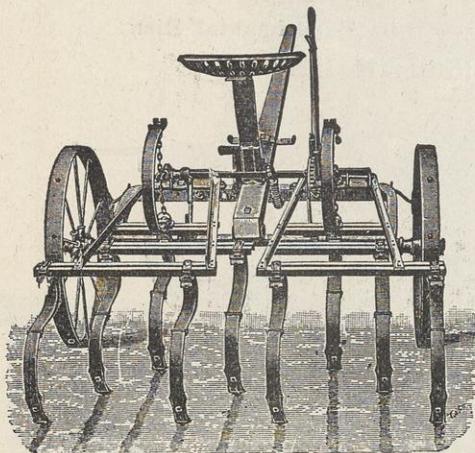
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Implements for Orchard and Vineyard

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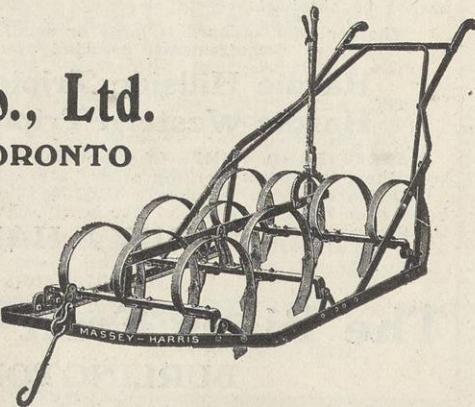
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BRANCHES AT

Montreal Moncton Winnipeg
Regina Saskatoon Yorkton
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Edmonton

Agencies Everywhere



The Brown Tail Moth

(Continued from page 114)

oughly with a spray solution containing not less than two pounds of arsenate of lead (the arsenate of lead is to contain not less than fifteen per cent. of arsenic oxide) to every forty gallons of water after the leaves appear and before the blossoming of the trees. The spraying is to be carried out in a satisfactory manner, and all cases in which the instructions have not been carried out will be reported by our officers in charge to the Department.

Those fruit growers who are accustomed to spray thoroughly and at the proper time need fear no defoliation or trouble, but it is to their interests to cooperate with the Dominion and Provincial Departments of Agriculture in seeing that the less progressive persons carry out the necessary requirements.

Pre-cooling Advocated

At a recent meeting of the directors of The United Fruit Companies of Nova Scotia, Limited, Mr. Davidson representing the Fallmouth Fruit Company, presented an indirect argument in favor of the pre-cooling plant it has been proposed to establish for the benefit of Nova Scotia fruit growers.

Mr. Davidson stated that this year the management of the United Fruit Companies would have to place some ten thousand barrels in cold storage at St. John. It has been proved that the cost of having this stuff held in St. John is about fifty cents a barrel, or in round figures, five thousand dollars.

Commenting on this statement Mr. A. E. Adams, the manager of the United Companies, writes as follows: Five thousand dollars to have ten thousand barrels stored under the very worst conditions possible, but even then well expended, because it would keep that quantity of fruit off the market when the market was at the lowest point. Yet when that five thousand dollars was expended there would be nothing to show for it beyond the immediate benefit derived.

"How much better and how much more business like it would be to expend that five thousand dollars towards the equipment of a plant right here in the Valley, which would accomplish even better immediate results. The fruit being handled under much better conditions and immediately after coming off the trees, would arrive on the market in much better shape, and for that reason realize bigger money. In addition, we would still have a plant for similar operations in succeeding years. This is sound argument which we commend to the consideration of those who are not already convinced that cold storage or pre-cooling is absolutely essential."

Item of Interest

Members of the Port Arthur Board of Trade recently entertained Mr. Arthur Sitch, of Hymers, an agricultural district tributary to Port Arthur, in honor of his having established a record production for potatoes of four hundred and twenty-six and one-half bushels for an acre. The competition was open to the province. Mr. Sitch received as a reward a course at the Guelph Agricultural College. The establishment of an experimental farm in the Port Arthur district is being recommended.

The Export Trade in Pears and Peaches

(Continued from page 118)

demand for good pears would seem to warrant. The reason assigned for this over-ripe condition by competent authorities would appear to be the very wet weather experienced whilst the fruit was on the trees, which is considered to have militated against the keeping qualities and vitality of the fruit. However that may be, it is certain that warm weather whilst the fruit was in store or in transit must have been the determining factor of its condition on arrival here, and the demand being what it was, it was a mistake to have shipped a single package across the water in ordinary stowage. On the other hand, many parcels which came forward in refrigerator on the steamer were in over-ripe condition on arrival, which we consider to be due to them having been stored for several weeks before shipment in ordinary storage. At the beginning of the season the weather is too warm for the efficient transport of pears in ordinary stowage, and later in the season their keeping qualities are likely to be impaired.

"The great bulk of pears in barrels were Kieffers, but there was a fair sprinkling of

TRADE MARK

Ploughs—Wilkinson
REGISTERED

U.S.S. Soft Centre Steel Moldboards, highly tempered and guaranteed to clean in any soil. Steel beams, steel landsides and high carbon steel coulter. Clevises can be used either stiff or swing. Each plough is fitted especially with its own pair of handles—rock elm, long and heavy and thoroughly braced. The long body makes it a very steady running plough. Shares of all widths—specials for stony or clay land. The plough turns a beautiful furrow, with minimum draft and narrow furrow at finish. Ask for catalogue.

The Bateman-Wilkinson Co., Limited
461 Symington Ave.,
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No. 3
Sod or
General
Purpose
Plough.
25 styles
to choose
from.

Onion Growers

Do you intend to have any weeds in your onions this year? If so, ask me for literature which describes a machine that will separate the weeds from the onions, practically doing away with most hand weeding.

Don't delay. Act quickly if you want to secure a weeder this season.

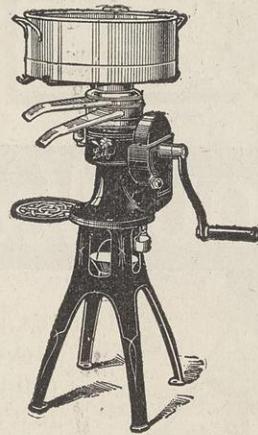
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International Harvester Cream Separators



A DAIRY farmer who does not use a cream separator is losing up to \$15 per cow per year. Complete your dairy equipment by the purchase of an International Harvester cream separator—Lily, Bluebell or Dairymaid. These separators skim closely—leaving barely a drop of cream in a gallon of milk—and they will do it for years.

These machines are furnished with pulleys for the use of power. Belted to a small I H C engine, you have the best outfit it is possible for you to buy. Note the low supply can on I H C separators, the height of the milk spout which allows a 10-gallon can to be used for the skim milk, the strong frame with open base which can be kept perfectly clean, and the dozen other features which make these I H C machines the best.

Your local dealer should have one of these machines on sale. If he has not, write us before you buy and we will tell you where you can see one; also send you an interesting book on separators.



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Our "XXX" Vegetable, Clovers and Timothy Seeds are approved by the Dominion Government for Purity and Germination. Ask your dealer, or write direct for catalogue.

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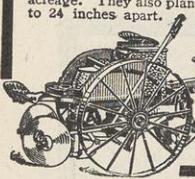
Potato Profits

depend largely on how the crop is planted. Every skipped hill is a loss in time, fertilizer and soil. Every double wastes valuable seed. It means \$5 to \$50 per acre extra profit if all hills are planted, one piece in each. That is why

IRON AGE 100 Per Cent Planters

often pay for themselves in one season on small acreage. They also plant straight, at right depth, 12 to 24 inches apart. With or without fertilizer distributor. Ask your dealer to show you this Planter and write us for booklet, "100 Per Cent Potato Planting" and copy of Iron Age Farm and Garden News.

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**BLACK CURRANTS****Why not Plant a Large Patch this Spring**

We still have a few thousand first-class plants of the **BLACK NAPLES** variety. Very hardy and prolific.

Ask us for prices on **LAWTON BLACK-BERRY** Plants. Write to

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Mention The Canadian Horticulturist when writing.

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It's Free

It's packed full of information that will prove helpful to you in the planning and planting of your garden. Information that's worth dollars—just a plain simple story of the best methods to pursue. Tells when to plant, how to plant and what to plant. Your copy is ready, drop us a post card now, you will get one by return mail.

KENNETH McDONALD & SONS
SEED MERCHANTS
OTTAWA.

DEPT 2

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TESTED SEEDS
TRUE-VIGOROUS-RELIABLE

Protect your trees and garden

A Fairbanks-Morse Spraying Outfit offers you the most effective and economical means of destroying insects and of curing and preventing plant and tree diseases.

The spraying machine illustrated here can be used for practically every spray use on any farm, and will quickly pay for itself in improved crops.

You can buy a Fairbanks-Morse or Gould Spraying Pump, from a brass hand pump costing a few dollars up to an engine-operated, truck-mounted outfit of the highest efficiency.

Send for free catalogue of spraying outfits and appliances. It contains much valuable information, tells you what to spray, what chemical compounds to use, how to prepare them, when to do the spraying, etc. We are the largest Canadian dealers in farm engines, scales, and mechanical goods of every kind.

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Canada's Departmental House for Mechanical Goods

Duchess, Anjous, Seckle, Louis Bon, Clargeau, etc., which are subject to the same remarks. Barrels of Keiffer pears realized from 15s to 28s for the first grade of sound fruit according to quality, condition, and the fluctuations of the market. Duchess pears ranged from 25s to 45s, Anjous 20s to 26s, Seckle 26s to 42s. In addition to barrels of Keiffers, we also handled a good number of boxes and half-boxes. Prices for boxes ranged from 5s to 6s 9d, and for half-boxes from 3s 6d to 4s for first grade fruit. It must be considered that the prices quoted are very satisfactory, but when taken in conjunction with the large proportion of rotten fruit which did not realize the cost of marketing, etc., the net result cannot be considered in so favorable a light.

PEACHES SATISFACTORY

"We had a few half-boxes of Canadian peaches, with 36 to 48 fruits each, which sold at from 9s to 11s per package, which must be considered to be a very highly satisfactory result. We think there should be a good business in these rather lower prices for the future.

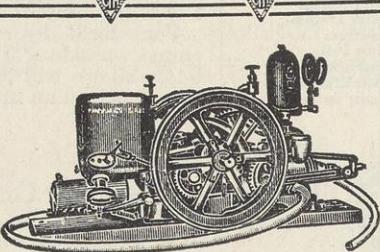
"As regards barrels, we consider the Canadian packing to be superior on the whole to that of other countries exporting to this market. The barrels are larger, containing some 180 lbs., of fruit average; whilst the use of eight hoops round the barrels which the best Canadian packers use, two at each end and four in the middle, should be made general, when the proportion of slack-packed fruit which so extensively diminishes growers' profits would be greatly reduced. The half-box package is the package for Bartlett pears, and we think it could be used with advantage for other varieties.

"We have mentioned that we had a parcel of half-boxes of Bartletts for which we realized 11s per package. The package used was a patent one, of which the lid fitted into a groove at each end, which groove was made in the size of a wooden clamp fastened to the edge of each of the end-pieces. When the lid had been so fitted, it was secured by a strip of wood nailed above it to the inside of each clamp. The clamps thus stood higher than the lid, and when the boxes were piled above one another in tiers, the top box rested upon the clamps of the box below and the whole weight of the boxes was thus borne by the end-pieces, edgewise, instead of being borne by the bulge of the lid, thus cutting and bruising the fruit. If this package could be generally used, the value of the fruit when it reached the market would be enhanced by several shillings per package.

"We also notice that various growers did not wrap all the pears in each box, but contented themselves with wrapping the top layer only. There is no utility in this, the pears should each be wrapped in the growers' printed paper, or otherwise it is cheaper to wrap none, as buyers will not pay the price of wrapped fruit for boxes, the contents of which are largely unwrapped.

FRUIT TO ARRIVE IN GREEN CONDITION

"The lesson of the past season, as of others, is that expense should not be spared in order to get the fruit here in hard green condition, which if accomplished will surely reap its reward in greatly increased prices; over-ripe fruit, i.e., fruit too ripe to stand during the period of reaching the ultimate consumer, has only a small chance of paying for its cost of marketing, and a very great chance of being thrown away as valueless, if market and weather conditions are against it; there is no margin for salesmanship in the handling of such fruit.



Superior Golden Queens

that produce workers for honey. The gentlest bees on the earth to handle and the yellowest. Untested, each \$1.00, six \$5.00. Tested, \$2.00 to \$3.00. Breeders, \$5.00 to \$10.00.

J. R. BROCKWELL, BARNETTS, VA., U.S.A.

FOR SALE

Apiary, in first-class condition; Grey County, 2½ mile from Tara.

110 hives of Bees, good strain of hybrids, no blacks, 250 supers of drawn comb, also winter packing cases; 8 ft. board fence surrounds yard. Price, \$1,200. Good reason for selling. Write for particulars.

J. H. DUNCAN TARA, ONT

Are you ready to spray, when the petals fall?

The young larvae of the codling moth enters the blossom end of the apple soon after the petals fall. A drop of

**Neutral Arsenate of Lead**

in the calyx cup before the lobes close, prevents the worm from entering and saves the fruit. This Arsenate is not only perfectly safe in use, but owing to its finely divided condition, it stays better in suspension, covers more foliage and sticks to it better than ordinary Acid Arsenate. We will be glad to quote prices and give further information.

THE
CANADA PAINT CO.
LIMITED

PAINT-VARNISH AND DRY COLOR
MAKERS-LINSEED OIL CRUSHERS
MONTREAL-TORONTO-WINNIPEG-CALGARY-HALIFAX
OXIDE MINES-RED MILL QUEBEC

**British Fruit Salerooms**

The saleroom in Liverpool belongs to the Brokers' Association itself, and in Manchester, although the Corporation owns the building, they leased it to the Manchester Association for a term of years. Both buildings are very similar in internal appearance, being constructed on the amphitheatre or tier system, the seats of the buyers rising one above the other in a three-quarter circle facing the rostrum, the samples coming up from the cellar below the lift.

These salerooms are not open to the public, nor indeed to any buyer. Persons wishing to buy from the brokers must be members of the Fruit Growers' Association which was formed in each place some years ago. No other, except duly and formally admitted representatives of members' firms may attend the auctions, and even if the actual owner of the goods wishes to see them sold, he must take a seat with the auctioneer and his clerks and is not admitted amongst the buyers.

Admission to the membership of these buyers' associations is a most difficult matter, as it is to existing members' interests to keep new members out, the result being that while some members are little more than retailers other firms in the district whose business has so expanded as to well qualify them for membership, are unable to obtain admission to the charmed circle. If these wish to purchase goods in the saleroom they are compelled to get a member to do it for them, for which service a fee is charged.

STRAWBERRY PLANTS

For sale. Fine stocky, well-rooted plants. Eleven tested varieties. Write for list and prices.

S. H. RITTENHOUSE, JORDAN HARBOR, ONT.

NOTICE TO BEEKEEPERS

Those intending to introduce new blood into their apiary will do well to send for my descriptive price list of three banded Red Clover Italian Queens. It's FREE.

W. R. STIRLING
RIDGETOWN - ONTARIO

Glorious New Spencer Sweet Peas

KING WHITE—It attains perfection in every detail, which goes to make up a Spencer Sweet Pea. It is the experts' ideal for perfect form. The improvement in form, size, vigor, waviness and purity stands eminently out when compared to other White Spencers, and calls for unstinted admiration. The number of four-blossomed sprays and the great length of stem will appeal strongly to those wishing a good White for decorative work. Packet, 20c.

"EMPRESS EUGENIE"—The color is a delicate tone of light gray flaked with light lavender. A vase or bunch gives a most charming effect. The flowers are of large size, beautifully waved and crimped. A vigorous grower and very free bloomer, throwing a large proportion of four-flowered sprays. Packet, 20c.

FREE—Our 112-page illustrated catalogue of Vegetable, Farm and Flower Seeds, Plants, Bulbs, Implements, Poultry Supplies, etc. Write for it.

JOHN A. BRUCE & CO., Ltd., Hamilton, Ont.
SEED MERCHANTS

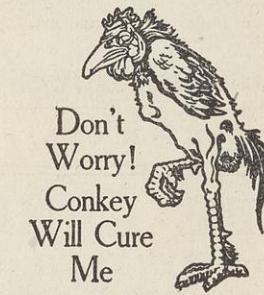
NEW AND RARE SEEDS

Unique collection. Hundreds of varieties adapted for the Canadian climate. Perennial and perfectly hardy. Own saving. Catalog free.

Perry's Hardy Plant Farm
ENFIELD, MIDDLESEX, ENG.

Over 60 years Horticultural Experience is offered for the Beautifying of Your Garden by

KELWAY & SON
The Royal Horticulturists
Langport, Somerset, England



Do not let your chickens mope and die. Send for catalogue, with price list of Reliable Poultry Remedies, and prices of Eggs for hatching from different breeds of Poultry, including Turkeys, Ducks and Geese.

J. H. RUTHERFORD

Box 62

CALEDON EAST, ONTARIO

ILLUMINATOR—A glorious orange-salmon Sweet Pea. In dull light the color appears to be a flat orange scarlet, but when in bright sunshine or artificial light, the color is completely changed, and it appears a bright salmon cerise, sparkling with orange. It introduces a new shade of color to Sweet Pea enthusiasts of rare beauty, and with its additional attributes of great vigor, floriferousness and symmetry, it is sure to captivate all who give it a place in their garden. Packet, 20c.

"WEDGEWOOD"—It is a true self and is appropriately named, as its color throughout is a unique shade of wedge-wood blue, a color so popular in China. It produces profusely flowers of good size, borne almost uniformly in four-flowered sprays, well placed, upon long stout stems. Of finest Spencer form. The standard and wings are well waved. Packet, 20c.

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500,000 FEET BELTING FOR SALE
Leather, Rubber Canvas, etc. 100,000 rods Wire Fencing, 40,000 lbs. Barb Wire at 2c. per lb., 300,000 ft. Iron Pipe, also 1,000 other bargains at 25% to 50% less than regular value. New lists just issued, sent free on request. Write immediately.

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All kinds of Machinery Bought and Sold.

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Millions of acres of virgin soil obtainable free and at a nominal cost are calling for cultivation.

Thousands of farmers have responded to the call of this fertile country and are being made comfortable and rich. Here, right at the door of Old Ontario, a home awaits you.

For full information as to terms, regulations, and settlers rates, write to

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Director of Colonization
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The buyers are under an agreement with the brokers not to buy by auction within certain limits, and the brokers are in turn bound to conform to a certain standard in the selection and cataloging of the goods, so it will be seen that the brokers' monopoly is well maintained; the same regulations practically applying to both centres.

It is not our province to discuss the fairness of this, and of course there are strong opinions both ways. Growers who send goods to be sold for their own account must decide for themselves as to the relative value of the sale by auction as against the sale by private firms. These latter, of whom many are to be found in our advertising pages, just sell on the open market, or very often actually on the quay side in the ordinary private treaty manner.

What will most interest our readers, however, will be the selecting of apples for the big sales. Each broker has of course a staff of experienced men who examine the apples on the arrival and discharge of the boat. They are then classified, each according to its own mark and grade, as follows: (First) Tights, or barrels in perfectly good condition. (Second) Slacks, or barrels in which the apples have sunk a little, but which are not very bad. (Third) Slack and wet, and (fourth) Wasty. The last two designations speak for themselves. Occasionally we get some almost worthless, others worthless, and in the latter case the goods are only sold for the value of the barrel.

These selections have to be very carefully made, as under certain circumstances buyers can refuse their purchases if the selection is not up to the standard bought. In this case the goods are often sold again at the next sale, with the proviso "No rejections" which of course means a lower price.

Extended cooperation, the union of local associations in one central selling body, is the most urgent need in connection with the fruit growing industry of Ontario at the present time.

RENNIE'S I.X.L. TOMATO

EXTREMELY EARLY,
WONDERFULLY
PROLIFIC

A week earlier than the Earliana. More productive than the Chalk's Jewel. As large as the Plentiful. As solid as the New Globe. In fact, the world's leading extremely early Tomato.

In our field tests, I.X.L. Tomato proved to be a week to ten days earlier than the Spark's Earliana, with an abundance of fruit larger and more prolific than Chalk's Jewel; in fact, any number of specimens could be found as large as the Plentiful Tomato. The I.X.L. Tomato is without a single exception the leading extremely early Tomato. Do not experiment with it, but plant your entire early crop in I.X.L. Tomato. Your crop will net you big returns.

1. A beautiful, brilliant red color.
2. Vines are a perfect mass of large, smooth fruit, a single plant yielding $\frac{1}{2}$ bushel.
3. Fruit extremely early, enormously abundant, ripens all at once.
4. Vines compact and can be placed two'ee tapatin' the ee-foo rows.
5. The largest growers tell us that we cannot say too much in favor of the I.X.L. Tomato.

Price: $\frac{1}{2}$ lb. \$2.25, oz. 75c, $\frac{1}{2}$ oz. 40c, pkt. 15c

OUR SPECIAL OFFER

We want every person who uses seeds to see our 1914 Seed Book and try this Splendid Early Tomato, and we will send a packet for 10c. with Seed Book. This book is full of new photographs of Vegetables, Fruits and Flowers. Send your address to-day.

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Northern bred Italians. Hardy stock, best strain honey gatherers. Order NOW. Prices. April and May—Untested \$1.00, Tested \$1.50. Selected \$2.00. Extra selected, 3 banded, \$5.00.

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Apple, Pear, Plum, Cherry, Peach, Grapes, Small Fruits, Deciduous and Evergreen Ornamentals, Roses, Flowering Shrubs, Climbers, etc.

Catalogue Free: It tells the whole story.

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Advertisements in this department inserted at rate of 3 cents a word for each insertion, each figure, sign or single letter to count as one word, minimum cost, 30 cents, strictly cash in advance.

ALL KINDS OF FARMS—Fruit farms a specialty.
—W. B. Calder, Grimsby.

NIAGARA DISTRICT FRUIT FARMS.—Before buying it will pay you to consult me. I make a specialty of fruit and grain farms.—Melvin Gayman & Co., St. Catharines.

RELIABLE HELP, SKILLED AND unskilled, supplied horticulturists and others. Canadian Employment Bureau, Proprietor member of B. G. A., London, England, 65½ James St. South, Hamilton, Ont.

ASK DAWSON. He knows.
IF YOU WANT to sell a farm consult me.
IF YOU WANT to buy a farm consult me.
I HAVE some of the best Fruit, Stock, Grain and Dairy Farms on my list at right prices.
H. W. Dawson, Ninety Colborne St., Toronto.

SALMON ARM, Shusway Lake, B.C., has the finest fruit and dairy land in B.C. No irrigation necessary; mild winters, moderate summers, no blizzards or high winds; delightful climate; enormous yields of fruit, vegetables and hay; good fishing; fine boating amidst the most beautiful scenery, and the Salmon Arm fruit has realized 25 cents per box more than other fruit in B.C. Prices of land moderate, and terms to suit. Apply to F. C. Haydock, Salmon Arm, B.C.

BEEs wanted, up to 250 colonies. Particulars to Box 23, Fisherville, Ont.

BEEs WANTED—Either with or without other equipment. Give full particulars to Wm. Weir, 34 Chester Ave., Riverdale, Toronto, Ont.

BEEs WANTED—Particulars to A. D., Box 86, O.A.C., Guelph.

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50 COLONIES OF BEES for sale. Address, W. S. Walton, Scarborough Junction, Ontario.

I BUY BEES STANDING. Myself pack and load. Owner pockets cash.—F. A. Allen, Philipsburg East, Que.

FOR QUICK SALE—25 Colonies of Bees, also 24 lbs. Bees Wax. Price reasonable.—Mrs. W. H. Webster, Bellamy, Ontario.

BEZZO'S FAMOUS PRIZE ASTERS—Read particulars on page ix.

I CAN NOW SUPPLY the demand for Old Country Gooseberry Bushes—2 year 25c, one year 15c each. Tam O'Shanter Red Currant Bushes, 25c.—Wm. Dick, Echo Place, Brantford, Ontario.

EXPERIENCED BEEKEEPER desires an engagement for the season. Age 30.—Box 20, Canadian Horticulturist, Peterboro, Ontario.

FOR SALE—Bees and Queens. 2 frame Neuclei Queenless \$2.25, 3 frame \$3.25, 10 frame Colonies with Queen \$8.00, f.o.b. Berclair. Queens, tested \$1.25, untested \$1.00.—John W. Pharr, Berclair, Texas.



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DON'T PAY FREIGHT ON WATER

NIAGARA SOLUBLE SULPHUR

The Sulphur Spray in powder form. Controls Scales quicker and better than Lime-Sulphur. A positive control for Apple Scab, Peach Curl and other fungus diseases.

It has the following advantages over Lime-Sulphur: Is cheaper, easier to handle, no leakage or loss, no sediment, keeps indefinitely, saves freight and storage.

100 lbs. of Soluble Sulphur will make more spray than a 600-lb. barrel of solution.

Remember Soluble Sulphur was used by over 500 growers in Ontario last year. It will be used by thousands this year. There is a reason for this. Soluble Sulphur does the work. Saves time and money and eliminates many of the objectionable features of spraying. This material can only be procured from us. Place your order early so as to be sure and be supplied.

If you have never used this great spray let us send you full particulars.

ARSENATE OF LEAD

The highest grade only. The kind that mixes easiest. Does not burn foliage. Contains the highest analysis of arsenic.

SWIFT'S is made up to a quality, not down to a price. It is always full weight, guaranteed. The best is always the cheapest.

NIAGARA LIME-SULPHUR

The pioneer and reliable solution. Highest in Beaume test. Clear and uniform.

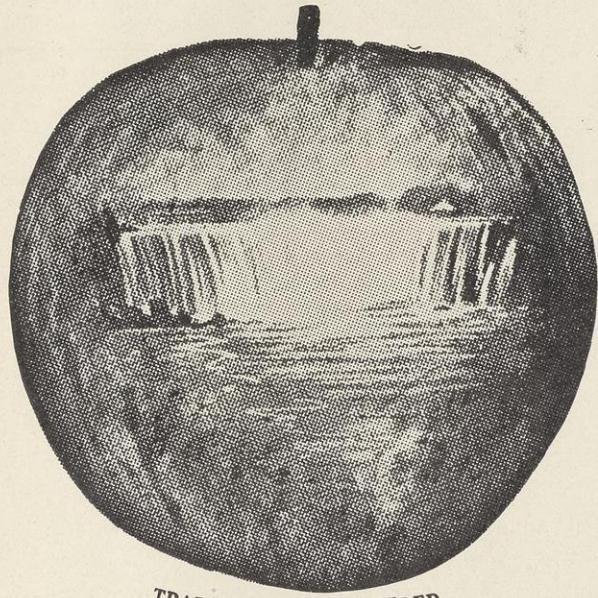
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Finest Roses, "Dickson's"

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**Full Assortment of all the
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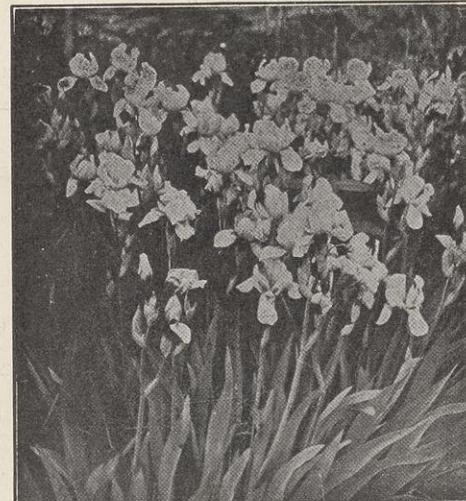
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CAN BE MADE BY SOWING

SIMMERS' "TORONTO PARKS" LAWN GRASS SEED

This is by far the best mixture of grasses for the purpose of quickly producing a permanent lawn. It is prepared from our own formula, and is a careful blending of varieties adapted to producing the thick growth and velvety appearance so much sought after. Each variety of grass in its composition is there for a special purpose; some for making strong, fibrous roots which take hold upon the soil and keep the turf in place; others of a creeping nature quickly fill up any bare spots which may be caused by the taller sorts dying down; varieties which are useful for their color value, and also kinds that are able to stand the beating down of excessive rains.

PRICE—per lb., 30c.; post paid, 35c.; 5 lbs., \$1.40; 25 lbs., \$6.75; 100 lbs., \$25.00, at buyer's expense.

"SHADY NOOK" MIXTURE

Usually it is quite difficult to obtain a satisfactory growth of grass under trees and in other shady places. For sowing in such places we recommend the use of this special mixture. It will quickly produce an abundant and even growth of beautiful green grass. The grasses used in making this special mixture are only those that are well adapted for growing in the shade, and as it blends well with our "Toronto Parks" Lawn Grass mixture, it may be used on those portions of the lawn which are shaded by trees, buildings, etc., thus covering the whole area with a rich green sward.

PRICE—per lb., 35c.; post paid, 40c.

Try our "GOLF LINKS" MIXTURE

For Tennis Courts, Golf Links, etc. Put up expressly for the purpose and will stand rough usage.

Lb., 30c.; post paid, 35c.; 5 lbs., \$1.40; 25 lbs., \$6.75; 100 lbs., \$25.00.

Our Lawn Grass Mixtures are composed of seeds of the highest grades, and should, under normal conditions, produce the best results. The formulas used are the result of a life-long experience with grasses adapted to lawn making in this country. **Illustrated Catalogue Free.**

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