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# THE CANADIAN HORTICULTURIST & BEEKEEPER

Vol. 27, No. 7, July, 1919  
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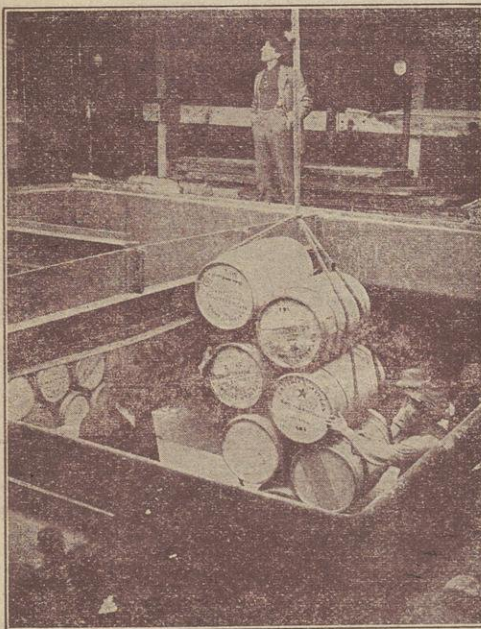
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## The Canadian Horticulturist

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# The Canadian Horticulturist and Beekeeper

(See Pages 187-192)

(See Pages 187-192)

Vol. 27

TORONTO, July, 1919

No. 7

## Best Varieties for Specialty Apple Orchard\*

W. H. Gibson, Newcastle, Ont.

AS regards the best varieties of apples in a large orchard, it is nice to have a selection, thereby extending the picking season. This makes it easier to obtain sufficient help for picking. Starting with the Duchess I would like enough of this variety to make up several car lots. By making two or three pickings I leave the green apples to develop and obtain a large per cent of No. 1 of good color. A quantity of Bartlett pears enables the picking gang to be employed after the Duchess. Some Alexander apples could be quickly harvested followed by a good lot of Wealthys, which, like the Duchess, should be thinned early in the season and at least two pickings made in harvesting. This will give choice No. 1 apples suitable for boxing, which will bring good prices. No. 2 and No. 3 small and green Wealthys are unsatisfactory for grower and buyer.

I would advise a few St. Lawrence but no Gravenstein, as our climate is too severe for that fine variety. Wolf River is reliable, quickly gathered and in good demand. I would advise some Blenheim and Ribston to fill in the season between the fall and early winter varieties, and would have a few Greenings and Fallwater but not many as both kinds are not very reliable in the Lake Ontario district. A good lot of Snows and McIntosh would be better. These should be ready to pick during the first week of October. Snows should be carefully thinned early in the season to obtain size and color and with the McIntosh receive an extra thorough spraying in July.

Following these in order of gathering would come some Hubbardson and then the Starks. This variety has been planted very extensively and next to the Ben Davis is our most productive winter apple.

In some orchards Stark is a disappointment, as when in large blocks

and some distance from other varieties which blossom at the same date the blossoms fail to fertilize and drop off leaving a scattering crop of defective apples.

I would advise grafting early blossoming kinds among the Starks when in large blocks, also placing a few hives of bees in that part of the orchard. This is worth trying as it is a pleasure to harvest a good crop of Starks, and a gang can pick and pack more barrels of this variety in a day than any other kind. The Baldwin is a disappointment. It has produced very little fruit during the past three years and has suffered severe winter injury.

Ben Davis is our most productive variety. It will yield good and very profitable crops in years when most other kinds are light. I have found the Ben Davis my most profitable sort during the first twenty-five years of the orchard's life.

Golden Russet is fairly reliable on good soil, but I would not advise many as they are tedious to pick. I

would leave the Spy and Golden Russet as the last varieties in the orchard to harvest, as both sorts need the full season to develop.

A well matured and good colored Northern Spy is the best fruit on earth, bar none. It is a pity that it is so slow in bearing. I have Spy trees twenty-five years old, fine large trees twenty feet high, which have not produced yet, but I trust they will make good during the second twenty-five years of their life. I would not advise the whole farm to be planted with apples. Probably one-third to one-half would be sufficient and all that the owner could take care of.

There is the question of fertility to be considered. If the orchard is sown with clover crops to be plowed under annually and the rest of the farm produces all the clover and live stock possible, then the orchard can be kept in a good state of fertility. In a year when apples are only a medium crop or when the price is low then the farmer instead of having his eggs all in one basket would have



A busy day at the fruit shipping platform, Grimsby, Ont., in the heart of the Niagara district.

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





A view of a portion of the apple orchard at Macdonald College, Que., in charge of Prof. T. G. Bunting.

other farm products to dispose of which shows that mixed farming is best for the Ontario farmer. It is

tiresome to have too much of one thing and a change of work gives variety which means much in life.

## Causes of Winter Injury

J. A. Neilson, O.A.C., Guelph, Ont.

THE question may properly be asked, what are the factors which pre-dispose tree fruits to damage by low temperatures. The primary cause of winter killing is a very low temperature but along with this there are several factors which may directly or indirectly increase the degree of injury.

First—There is a great difference in the hardness of varieties, when grown in the same soil and under the same conditions. The winter of 1917-18 showed more clearly than ever before, that certain varieties are more resistant than others. In Ontario the hardiest varieties are mostly those which originated in either Russia, Canada or the Northern States. The unfortunate thing in connection with those of Russian origin, is that while they are very hardy there are really no first-class apples amongst them. The good varieties of Canadian origin while hardy enough for most winters are not sufficiently hardy to stand exceptional winters such as that of 1917-18.

Second—Trees growing on the sites exposed to strong cold winds were invariably injured to a greater extent than those growing in well protected areas. Examples were seen in Norfolk, Prince Edward and in York Counties.

Third—Orchards which were cultivated late in the season were generally more severely injured than other orchards in the same localities where cultivation was discontinued early or where but very little cultivation was given. Late cultivation causes the trees to grow late in the season. In such cases the wood does not ripen

properly and hence may be injured by very cold weather. Killing back and bark splitting may be induced by late cultivation. I do not wish to depreciate the value of orchard cultivation by any means, as I think that judicious cultivation will produce good results, but I do think a mistake has been made by cultivating too late in the season. Plowing the soil away from the base of the trees late in the fall is not advisable as it may predispose the trees to collar rot. If fall plowing is done do not plow the soil away, close up to the trees. Plowing the soil up to the trees may not prove injurious if the soil is thrown toward the trees and not way from them.

Fourth—Trees on poorly drained soils were invariably injured more than those on well drained soils. This fact was noticeable in all sections but especially so in the peach growing areas.

Fifth—Bearing trees growing on soils deficient in fertility were more severely injured than those growing on moderately fertile soils. Of course it is possible to make some soils too rich, especially in nitrogen, but it is seldom this occurs. My own observations and the observations of others who have studied winter injury, justify me in stating that many of our bearing fruit trees are pre-disposed to winter killing by lack of food.

### Heavy Production.

Sixth—Trees which bore a heavy crop of fruit in 1917 were more severely damaged than trees of the same variety or of the same hardness which bore a light crop or no fruit during 1917. In Prince Edward coun-

ty I saw what appeared to be, an example of the relationship of heavy fruiting to winter injury. A Pewaukee tree had the unusual habit of producing a crop of fruit on a central leader branch in one year and the next year the lower lateral branches bore fruit. On this tree the central leader limb bore no fruit in 1917 and in consequence thereof appeared to be quite healthy, while the lower lateral branches which bore a heavy crop in 1917 were nearly all dead. In Northumberland county a Northern Spy orchard nearly on practically the same kind of soil escaped almost uninjured, due largely to the fact that but little fruit was produced in 1917. Mr. W. T. Macoun, of the Central Experimental Farm, gives some interesting data on this question. Accurate records kept annually for twenty years show that the heavy bearing trees are much more susceptible to winter killing than those which produce a light yield or no fruit at all.

Seventh—Insect pests and plant diseases which attack the foliage of fruit trees often weaken the trees considerably by interfering with the growth processes, which are necessary for the proper maturity of wood and thus predispose the trees to winter injury.

## The Young Orchard\*

Wm. Everett, Simcoe, Ont.

In 1910 I purchased 50 acres of land. This land was a sand loam with a clay bottom, high and dry but very low in fertility. I planted 750 apple trees, 300 Spies, 350 Baldwins, 75 McIntosh Reds and 50 Snows and about 150 cherries, plums and pears.

This land required fertilizing. Barnyard manure at that time was scarce so I decided to sow a cover crop. After I planted my trees I plowed the land and kept it well cultivated until June 1st when I sowed sow peas. In September I plowed this crop under and sowed the land to rye and vetch. Thus you will see there was no profit for me that year, but the following winter I obtained a nice lot of barnyard manure, which I bought in the town having my hired man put it on the land when his time was of little value. The following spring I plowed the rye and vetch down and planted the whole orchard to potatoes and beans, which only paid expenses for manure and labor. But after the second year I was always able to make the land pay a profit while the young trees were growing.

My orchard covers 24 acres. Last

\* A paper read at the last annual convention of the Ontario Fruit Growers' Association.



year I grew off this land, after leaving four feet each side of every tree row, the following:

90 bush. wheat at \$2.50	....\$225
12 tons hay at \$12 a ton	... 144
10 bush. clover seed at \$22	.. 220
425 bush. potatoes at \$1	... 425
30 tons of corn at \$5	..... 150
300 bush. sugar beets at 30c.	90
500 bush. turnips at 25c	... 125

\$1,379

The price of wheat and clover seed last year was very high, but putting the wheat at \$1 per bushel and the clover seed at \$10, would still leave \$1,124. By using good land in setting out a young orchard, I contend, that the land can be made to pay while the orchard is growing. It can be made still more profitable, I think, by truck gardening and by raising small fruits such as strawberries and raspberries.

than tree being hit by frost would you recommend pruning heavily?

Mr. Hoy: Yes, we recommend heavy pruning if a part of the tree has been killed—cut out all the killed portions of the tree; that is cut it right back to the live wood.

Question: When do you advise pruning on cherry trees?

Mr. Hoy: A great many advise pruning cherries just when the crop is picked, and it works out all right. If a cherry needs pruning, by all means prune it; if it is getting out of bounds cut it down. But I know of instances in the Okanagan where there is a great deal of money lost every year in pruning cherries. The cherry trees are all gone over and practically every twig on the tree is removed. Many people are taking care of cherry trees that might better be pulled out and burned and the ashes put on the good trees. It may be possible to top work them in some instances, but there are cases where it would be better to pull them out.

Question: What about sour cherries?

Mr. Hoy: Thin them out so that you can get into the trees to pick.

Question: Some statistics were published a few years ago that showed that the apples not pruned at all had the heaviest crop and those heaviest pruned the least.

Mr. Hoy: In the case of a young tree they might have more fruit than if pruned all along.

Question: For how many years?

Mr. Hoy: Well, it might be for a good many years. A tree that is not pruned would eventually give small, poorly colored fruit.

Question: Does heavy pruning encourage winter injury?

Mr. Hoy: A very heavy pruning would encourage winter injury in case of the trees making very heavy growth. The trees don't drop the leaves early and you get a soft immature tree.

Question: What would you advocate—a vase top tree or the pyramid?

Mr. Hoy: I don't advocate either shape. The main thing in a tree is to keep it open enough so that you can get light and air through the tree and are able to pick the fruit. If you don't do that you are going to be troubled.

Question: A pyramid tree is hard to get into.

Mr. Hoy: I would not advocate a pyramid tree—get a good framework and then you can cut your branches from the top and perhaps cut out the centre. The idea of building a tree is to build a framework in which all your branches are equally strong. In

## Pruning Apple, Cherry, Pear and Plum Trees\*

Mr. Ben Hoy, Kelowna, B.C.

THERE has been a great deal of money lost by wrong methods of pruning. One of the chief troubles with our pruning has been too heavy pruning, especially in young orchards just coming into bearing. Many of our orchards have been over-pruned and are over-pruned to-day. It is not only a loss of time and labor, but also a big loss in the production and yield. Too heavy pruning during the dormant season especially, or at any time of the year, is liable to produce a large amount of wood growth at the expense of fruit. That applies perhaps more particularly to our apple and pear trees.

On the other hand, we find orchards where there is too little pruning done. Many of our apricot growers and peach growers do not prune nearly

enough. In order to make an apricot tree produce every year it requires heavy pruning and cutting back. But in apples too heavy pruning has a tendency to weaken the trees.

Question: Would you suggest letting a tree come to bearing before you prune?

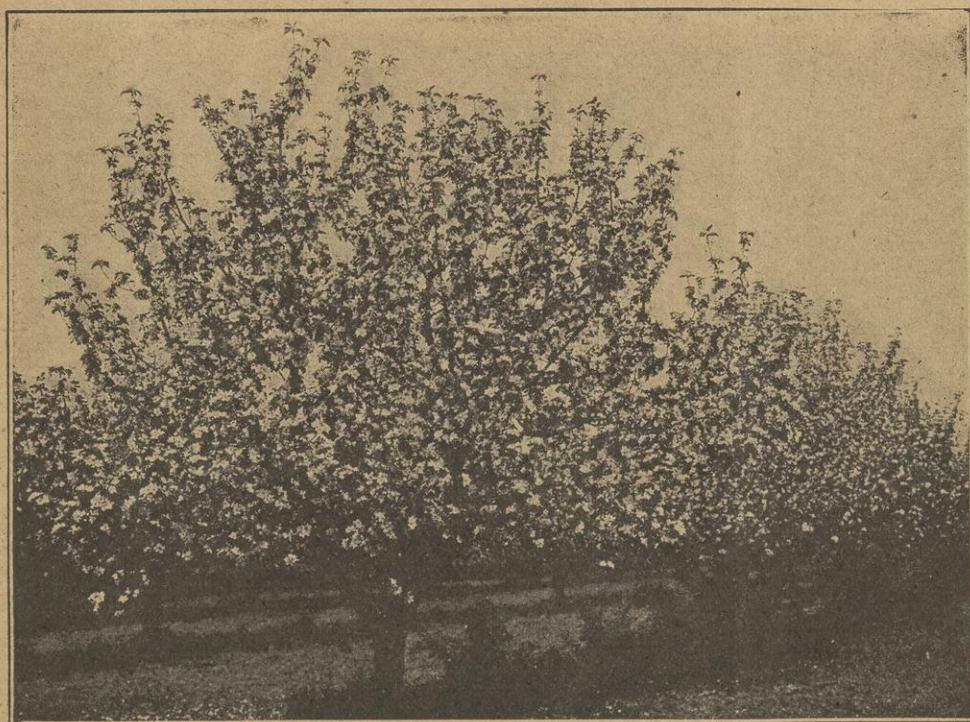
Mr. Hoy: No, a tree should be pruned heavily in younger years, but after the first three years you should not prune so heavily.

Question: Do you say in some cases of heavy pruning you find trees lose vitality—is that as far as fruit production is concerned?

Mr. Hoy: No, in wood growth as well. You often find great big trunks and little spindly top work on the tree, where it is carried to an extreme. Usually heavy pruning will stimulate a tree, but not this continuous pruning year after year.

Question: In the event of a Jona-

\*Report of a discussion at the last annual convention of the British Columbia Fruit Growers' Association.



Cherry trees in bloom in the orchard of John E. Reekie, Kelowna, B.C. Mr. Reekie's orchards are among the best known in the Okanagan Valley.



a pyramid you will find thickness at the top. In spite of the most severe pruning a tree will tend to take on its natural form.

Question: Is there any cure for gumosis?

Mr. Hoy: None that I know of only cutting it out and disinfecting the wound as well as you can.

Question: In pruning pear trees some say they should not be pruned for four years after setting out?

Mr. Hoy: No, I don't believe that.

## Sidelines in Fruit Growing

Manning Ells, Port Williams, N.S.

THE premier industry of the Annapolis Valley is the growing of apples for export. It is our one best bet. But growing apples is quite a seasonable occupation. The commercial orchard does not require attention every day in the year, and other crops that do not compete with apples can be grown on the well managed fruit farm and add greatly to the cash revenue. Indeed, I think I am safe in saying that only in exceptional cases can orcharding be carried on with profit if apples are the only crop sold. Farm surveys in New York State carried on for a number of years have shown that the biggest labor income was returned where the farm produced at least three cash crops. As a whole I do not think our farmers in Annapolis Valley have erred on the side of want of diversity, but where we have made mistakes it has been in not keeping the orchard to the front and building other crops around it, crops, as I said before, that do not compete with apples for attention at the same time.

On our farm at Port Williams we tried for some years to grow a large acreage of potatoes and carry on the orchard, and did not succeed with either. We then dropped the potatoes and tried strawberries in a small way and have gradually increased the berry plantation for the past ten years. With this crop we have had success.

Our Nova Scotia fruitgrowers do not all seem to appreciate the position we occupy in the Annapolis Valley in relation to other berry producing sections in the Maritime provinces. Our strawberries are ready for market fully ten days earlier than either New Brunswick or Prince Edward Island berries or even those grown in other parts of our own province such as the country near Truro. This is a wonderful advantage and enables us to have the whole Maritime provinces as our market until three-quarters of the crop is over. We have good train connec-

You must cut back the top to balance it up and give the tree a chance.

Q: Can you give us any information as to pruning plums?

Mr. Hoy: A plum tree requires pruning the first four years and then do a little less pruning each year. When a plum tree gets bearing it does not want so much pruning. Italian prunes, if pruned back a little each year produce a much better quality prune and a much better crop each year.

tion with all points on the Canadian National Railway and can place berries in Moncton, New Glasgow, or Sydney, in as good condition as in Halifax or our own local towns. We need less handling of crates at the railway junction points of Windsor and Truro, and might well endeavor to have the railways run a berry car through to Sydney and Moncton each day during the berry season, so that crates would not have to be picked up and thrown down some eight or ten times in a short journey of twelve hours. I believe some steps along this line would have been taken before if the tonnage of berries offering justified such a service, but fruit growing in the Valley has been going down hill the past five years as much in strawberries as in apples, and this season of 1919 the acreage is the smallest in the last decade.

### Spraying Suggestions\*

Mr. Ben Hoy, Kelowna, B.C.

There has been a lot of money lost by spraying too much and in the wrong way, and a lot lost by not spraying. The first thing in spraying is to know what to spray for; then what to spray with. Unless we know what to spray for, we are at a loss. Practically every pest needs a somewhat different spray and it has to be applied at certain times to get good results.

Many fruit growers are willing to try pretty nearly any new spray that comes on the market. Sometimes these new sprays are all right, sometimes better than the old ones, but it is an unsafe practice to try out new untried sprays. Many of the sprays do injury to the trees. When you know you have a spray that is doing good work each year a grower will be well advised to leave the new ones alone until they are thoroughly tested out.

\* Extract from a discussion at the last annual convention of the British Columbia Fruit Growers' Association.

### Fertilizer Tests Needed

We need to know more about the proper application of fertilizers. Careful studies have been made along many lines with most beneficial results, but we have now come to the point where we need to know more about the proper use of fertilizers. Fruit growers might well take this matter up with the directors of their experiment stations.—Prof. J. W. Crow, O.A.C., Guelph, Ont.

Q.—Have you found any difference between home-made lime sulphur and the commercial?

Mr. Hoy.—We have not experimented with the home-made against the commercial, but using the two mixtures in the same strength there will be no difference. You can get just as good results with the commercial product. Don't try out these new mixtures until you know. Stick to the old ones that you know something about and 99 times out of a 100 you will be money in pocket. The new ones may be better, but wait and see.

To tell which is the best spray you must have some pest to try it out against. We find the lime sulphur is giving best results against scab.

It is impossible to do thorough spraying with a small pump on bearing trees. You have to have some pump that you can at least maintain from 150 to 250 lbs. pressure if you are going to do good work. In getting in a pump it is quite an investment, but a power pump will save you the money if you have to do very much spraying. Power pumps save in time, in labor, and I believe they even save in material on the larger trees.

Black Leaf 40 in lime for green aphid is giving as good results as regular form of Black Leaf and soap and is much cheaper.

Q.—At what time would you put that on?

Mr. Hoy.—When the buds are showing at the tips; that is when the aphid is hatching. And every orchard in the Okanagan Valley ought to get that spray because there is aphid in nearly every orchard. Spray in the early part of the season—try and get the first brood.

Watch the celery for the development of rust. On its first appearance, remove and destroy affected parts and give the plants a thorough application of Bordeaux.



## Saving Winter Injured Trees

**M**ANY fruit growers are finding out only now how serious has been the loss of trees in their orchards as a result of the severe winter of 1917-18. In many cases it is being found that trees have been injured beyond recovery. In other instances there are still possibilities of saving the trees.

At the last annual convention of the New York State Fruit Growers' Association, held in Rochester, some Ontario fruit growers who attended the meetings heard an interesting address by Prof. W. H. Chandler, of Ithaca, N.Y., who described methods of treating different varieties of winter-injured trees. In part Prof. Chandler spoke as follows:

"What is best to do with the injured trees? Such severe killing does not often occur, so we have not much experience to guide us. In case of peach trees there is much more experience to help us than in the case of other fruits. The tendency of the young peach trees is to show complete recovery if they were not killed outright, so their future care is simple enough. In case of old trees that have been badly injured, we have found three or four pounds of nitrate of soda, in the case of a mature tree, will greatly hasten recovery. It would seem probable that the same treatment during the following spring would give good results, though of course if the soil is very fertile such results might not follow.

"The pruning to be given a tree the first season after a severe winter is of importance. Dehorning the tree, that is pruning back to stubs four or five feet long or shorter has often been recommended. Trees have so often been killed by this process, however, that it certainly is not a wise process. Moderate pruning, that is, slightly more than would be given on an ordinary year, has generally given best results. During succeeding years it would seem wise to prune a little more heavily than a tree would ordinarily be pruned. It should be remembered that all of the old sap wood, or nearly all, is dead. The tree will thus have its water supply somewhat reduced. So if a fruit of normal size is to be borne on dry years at least, the top should be somewhat reduced in harmony with the reduced water-conducting tissue. Further, this wood that has been frozen to death is not so strong as uninjured wood, so the top of the tree should be reduced by pruning in order to reduce the possible load on these weaker branches.

### Apples and Pears.

"In the case of apples and pears, perhaps the injury to the bark on the trunks and on the inner side of the branches will give the most permanent trouble. Of course the dead bark should be removed, but from my observation during the past summer I do not believe that this should be done before the end of the summer's growth after the injury. In many cases

though, where the bark is killed through or nearly through, the cambium remains alive and forms a new layer of bark. If the dead bark had been removed as soon as it was apparent, then the cambium would have been removed with it, and large unnecessary wounds would have been formed. The wounds on the trunk may heal rather rapidly, but where the cambium is all killed, and large wounds are left in the crotch of the branches, healing will be very slow. The greater tenderness of the bark on the inner side of the branch probably results from the fact that there is a much smaller leaf surface to send plant food down on the inside. For the same reason there will be a smaller supply of material with which to heal the wound. It is probable that in many cases where such wounds extend more than half way around the branch the branch should be removed. It is hard to advise definitely with reference to such trees, but it is probable that many will be left that later will be found worthless.

"With trees three or four years of age and perhaps even older, where nearly all of the branches showed bad crotch injury, it might often be wise to cut the tree off below where any sap wood injury is apparent, and cleft-graft, using scions one to two feet long. In the case of trees where the injury is to sap wood alone, little should be done. Many such trees have already shown a marked improvement in vigor, and with the increased thickness of new, uninjured sap wood they should show additional improvement during the following summer. Even branches that are in a desirable portion of the tree, but that look very weak, might well be left during the following summer. They can do no possible harm. In case of old orchards where the trees will not be replaced it seems particularly advisable not to remove a tree until after another summer's experience, or perhaps even longer. It should be remembered that this injured tissue does no harm to the uninjured, so even if one should decide to defer removal of dead branches until it is learned whether or not the tree is worth the incurring of so great expense, no great harm except to appearances could be done. As with peaches, trees with the water supply reduced by much injury in the sap wood would probably have an increased amount of renewal pruning after another year of growth shall have indicated what portions of the top are most worth keeping.

### Reducing Injury.

"Of course growers are interested in methods of handling trees that might reduce the amount of injury



Gathering the berry crop in a York County garden on the Kingston Road, near Toronto.



from future cold winters. We should not reach conclusions, however, from the experience of one winter alone. The winter of 1917-18 was extremely unusual. It followed what was probably the shortest summer on record, and the wood tended to go into the winter in an unripe condition. Further, the extreme cold came somewhat earlier in the winter than usual. Thus while with young trees any condition that reduced the growth during the previous summer, even growing in soils so wet that no growth was made, reduced the amount of injury. In the average season that certainly would not be true, and good early growth would generally be desirable. Young peach trees more readily reach maximum maturity than most varieties of apple trees. So it would seldom be desirable to check their growth, and a good early growth is always desirable. If it is necessary to increase growth by use of a nitrogen-bearing fertilizer, nitrate of soda will often be more desirable than manure, since it quickly stimulates growth in early summer, and is not available to encourage too much growth late in the season.

"In light sandy soils there may be more danger from checking the growth too early than from letting it continue too late; let us say, in case of an orchard in sod, if the growth be checked during a dry June and July, and the tree goes through a short rest period, then wet weather late in the season may stimulate late cambial growth, and the tree thus may go into winter in the worst possible condition; for injury to the cambium is more serious to the tree than injury to any other portion. Excessive pruning, particularly such as results from top-working, may prevent proper ripening of the wood. Considering all types of seasons, it seems probable that the best means of reducing possible winter injury is in nearly all cases to give the orchard what is ordinarily considered good care.

#### Are More Plantings Desirable?

"It may be well now to inquire as to whether or not the large number of trees killed or seriously injured makes this a good time to plant orchards. In the case of peaches it should be considered that not only has the possible yield in New York State greatly reduced, but in some other competing sections the injury has been even worse. It seems true then, that for the trained peach grower with a good location this is a very opportune time to plant peaches. With apples we cannot be so certain. While very many trees have been killed or injured, they have generally not been in the best producing sections, and it is

doubtful if they will reduce the yield enough to be noticeable in comparison with the ordinary fluctuations in apple yields. With apples, I sincerely believe that for the man whose character, location and experience fit him for the hazardous task of fruit growing, any time is opportune for planting; and that the inexperienced man or the man who tends to change from one industry to another should be very cautious about going into fruit growing. As for the experienced fruit grower whose character peculiarly fits him for that industry, while I cannot say with certainty what is best for him to do, I can best tell you what he will do by telling what one did. He was one of the most successful peach growers in the state, and partly because of his very success (the heavy crop of 1917) he lost most of his excellent orchard. Professor Whetzel was at his place at one time, and they were not yet certain as to whether or not he would lose his trees; yet but a little more than a week after that he had decided that most of his trees were dead and had set more than five thousand young trees; and from his manner you could not help but believe him when he said that he was never happier.

#### Orchard Care Pays

"I have never been so much impressed with the need for looking after an orchard as I have during the past couple of seasons," said Mr. W. H. Gibson, the well known apple grower of Newcastle, Ont., to a representative of *The Canadian Horticulturist*, who visited his farm recently. "The percentage of apple trees that have been destroyed as a result of winter injury during the winter of 1917-18 was very high, in some sections being reckoned as high as 60 per cent while in these counties of Northumberland and Durham it probably ran 25 or 35 per cent. But there has been an even greater injury done to the orchards of Ontario during the past couple of years through lack of attention, particularly in the spraying.

"It is folly to think that a lot of apples will be gathered from a big orchard whether it gets the proper care or not. The yield of good fruit will be almost entirely in proportion to the care the trees and fruit get during the summer. An acquaintance of mine with a 25-acre orchard, one of the best kept orchards in Ontario, last year did his pruning and cultivating but because of lack of labor neglected to spray. As a result he had 1500 barrels of apples to ship through our association and of these 1,500 were culls. They all had to be sold at next to nothing for evaporator stock. It was a dis-

couraging experience for the owner to have to market such a quantity of culls and led him to tell me that he wished that he hadn't an apple tree.

"The man who can't care for his trees should pull them out and make room for some crop that he can care for. There is money in apples if the right man is in charge of things. Another neighbor of mine with but five acres of trees sells annually from \$1,500 to \$1,800 worth of fruit."

#### Storing Roots, Vegetables and Fruit

Prof. D. H. Jones, Ontario Agricultural College, Guelph.

Such fruits as strawberries, raspberries, plums, peaches, currants, blueberries, etc., which are soft cannot be kept any length of time without fermenting or molding, unless they are canned. The canning process is simply for the purpose of killing all mold spores and yeast cells that are on the fruit, and preventing others getting on until the material is to be used. Canning fruits is not so difficult as canning vegetables, because it is easier to kill yeasts and molds which affect fruits than it is to kill bacteria that affect vegetables. These fruits may be cooked in a fruit kettle, sugar added to taste, and filled hot direct from the kettle into sterilized sealers removed direct from scalding water. The covers, rings and rubbers should be put on at once direct from scalding water and screwed down tightly.

Another way to preserve such fruits is by the cold pack method. In this method the fruits are not cooked before putting into the sealer. Sound fruit not over-ripe should be used. This is picked over and filled directly into clean sealers. Stone fruit should be pitted. A syrup of sugar and water sweetened to taste is then filled into sealers so as to completely cover the fruit. The tops, rubbers and rings are put on but not screwed down tightly. The sealers are then placed in a boiler containing cold water and this is brought to a boil and kept boiling for half an hour. The sealers are then removed and the tops screwed down tightly at once. When cooled, store away.

Teacher—Now, children, what are the national flowers of England?

Class—Roses.

Teacher—And France?

Class—Lilies.

Teacher—And Spain?

Silence for a minute in the class. Then some small boy at the back of the schoolroom said:

"Bulrushes, ma'am."



# Wintering With the Combination System

By G. A. Deadman, Brussels

IN last issue of *The Beekeeper*, I said that when our full depth hive was short of winter's supply and we wished to give them more honey rather than sugar syrup we simply placed a full shallow above. This is one of the times when the shallow system or the combination of the two has the deep frame beaten to a finish. I have never read anywhere where a shallow frame advocate worried over giving his bees a supply of winter stores. It is the deep frame men that do the worrying. I mean of course when it is honey rather than sugar they want their bees to have. This problem whether we should make up the shortage for winter with sugar syrup or honey is one that the beginner will have to solve for himself.

Some leading lights in beedom claim that bees have more vitality in the spring when honey fed. With a ten-frame hive or even an eight-frame, there will generally be some honey in them, so even when fed sugar syrup this syrup will be consumed first and, for bees long in confinement, one might suppose better than honey containing some pollen, and decidedly better than any honey not thoroughly ripened, which much fall honey is not likely to be. Apart from all this there are some, and always will be, who prefer leaving sufficient honey, rather than the bother of feeding. There is one thing you should never do, which is to feed back honey that has been once taken from the combs. You would have difficulty in keeping it from granulating if you did. Let it be well ripened sealed honey and I think if it is clover you will not likely get any that is better. Now, if you are an honey advocate, then either the shallow or combination system should appeal to you. If I had to do as is advised by the deep frame advocates I would never confine myself to honey-fed colonies.

The users of deep frames recommend when extracting, to save out full combs honey and later on exchange with those in the brood nest containing the least. Apart from the labor involved by such a method it is not wise. I take special pride in having my brood nest combs as perfect as I can get them. We use the Hoffman self-spacer with 13/8 in. spacing and no division board, and we have no difficulty in removing any frame required. We are careful, however, to keep these frames, when possible, in their relative positions in the hive. The outside frames have a little more

spacing than the regulation 13/8 in., or supposed to have, and usually contains mostly honey, but may be brood and pollen.

To go to a colony and disturb this winter nest which contains the pollen required for early brood rearing, taking away these selected frames, and replacing them with combs from the super that probably contains no pollen, and from the wider spacing in the super, may be too thick to work to advantage, and withal having to brush or shake off the bees, and running a chance of losing the queen would, to me, be almost a sacrilege. I might say that when given a choice between a clean extracting comb and one that has been used for brood rearing the queen will choose the latter every time.

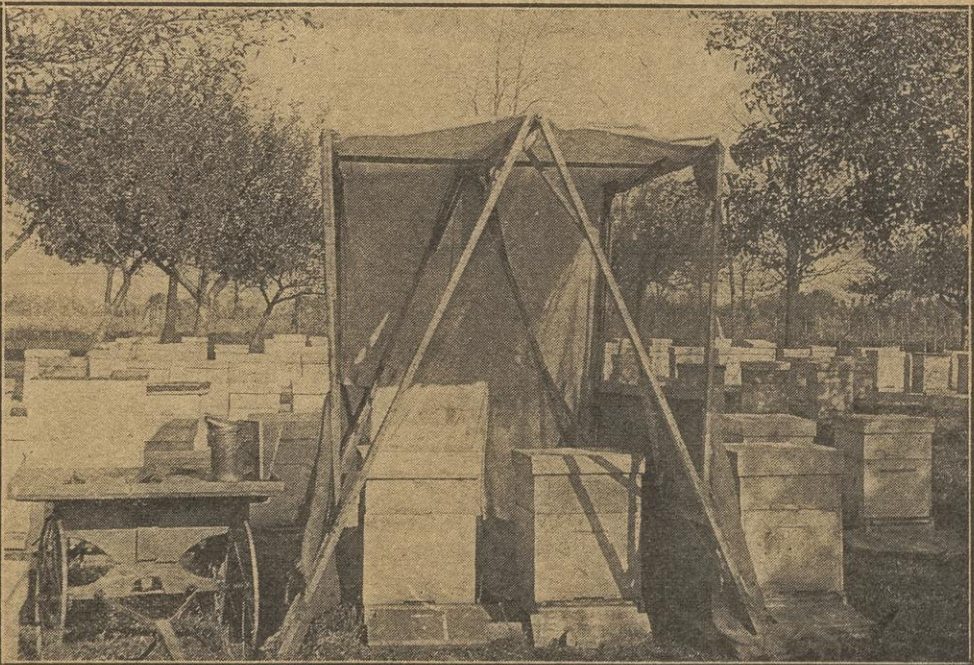
### A Choice of Six Ways.

In the last number of *The Beekeeper* I described a choice of four ways in wintering with the combination system. I should have said six. This system adapts itself to different requirements which adds to its value. When the deep hive has not sufficient honey in itself and we prefer making up the shortage with sugar syrup, we place the half hive below because this syrup will be placed in the one above, where it should be. Then when we prefer not to feed, we place this shallow full of honey above. Then we usually have one or more colonies in two hives containing deep frames, or

more properly in a hive and a super. This occurs when the queen gains access to the super through a defective queen excluder. Now, instead of shaking the bees and queen from these super non-spacing combs that may have brood in them, we simply place a hive of deep frames above that we may have from a queenless colony and which contains both pollen and honey. The following spring we can take away this super of empty combs, as the queen and bees will be occupying the hive above filled with our select brood nest combs. Those we winter on deep frames alone may be an odd one or two that have an abundance of honey but not flush in bees or we may be short of a shallow containing select brood nest combs. Then there were the five in three shallow Langstroth's hives. The other I omitted was the three shallow of our own. As it is the beginner's problems I am writing about and as this one of wintering is probably the greatest of all, I am going more into details.

### Empty Space Below for Wintering.

One of the problems that confront us all is, How much or how little space should there be below the frames for best wintering? Who knows? We know that by universal consent an extra space seems desirable, but who can say how much this should be? I mean, of course, below the frames occupied by the bees. We



An invaluable asset in the apiary. The bee tent of Mr. G. A. Deadman, Brussels, showing sides extended when in use. The tent has a wire screen at the sides and on top, and loose hanging overlapping material in front and back.



can buy a reversible bottom board that allows an extra space on one side, but who fixed that space, or said just how much it should be and no more? If any reader of this or any other journal has proved it conclusively let him speak out. Our bottom board, which I expect to describe more fully, is so arranged that I can drop the upper inner floor part down  $\frac{3}{4}$  of an inch, or remove it entirely, giving over two inches of space. Most of our winter cases require no bottom boards, so to have a little more than the regulation  $\frac{3}{4}$  in. we have a  $\frac{3}{4}$  in. lath so arranged that the hive rests on this, making a total of  $\frac{3}{4}$  of an inch. (My bee space is below the frames. Why we like it best there I will explain later.) I am not sure that even this extra space is beneficial. It might be when dead bees are thickly covering the bottom board, but we are never troubled that way now.

#### Shallow Combs Below.

Now if by general consent an extra space below the frames is desirable for wintering, why not put something there that will be of service, requiring no removal or reversing of bottom board? If the deep frame is considered the best for wintering we accomplish this in a measure by this half or shallow hive below or above as the case may be. When below it should temper somewhat or divert a direct draft from the entrance. Anyway our experience has been this: no harm results and it is certainly beneficial in many cases. We surely would have found its objection if any handling, as we have been doing, hundreds of colonies. Just why we like this shallow below and what we found and did with those 275 colonies when we lifted them out of their winter cases the first week in June will require another article.

### QUESTION BOX

Conducted by H. G. Sibbald

#### Price of Combs.

What is the price of empty combs and supers?

Good empty combs are worth from \$1.50 to \$2.50 per super of say eight to nine combs, super included.

#### Buying Bees With A. F. B.

Would it be wise for me to buy some bees from an apiary slightly affected with American Foul Brood? I have already 20 good clean colonies.

It would be very unwise to do so. Better increase from your own clean stock.

#### Price of Beeswax.

What is the price of beeswax?

It is worth from 45 to 50 cts. per pound wholesale at present.



With sides closed. The bee tent of Mr. G. A. Deadman. When the weather is as hot as we have it this year such an adjunct to the apiary soon repays itself in the working comfort it provides. It is hinged at the top and lies flat when not in use.

### The Raising of Queens

By S. Bisbee, Canfield.

**I**N almost every apiary there are some colonies that have a habit of rolling up large surpluses. The bees in that colony do not look different from thousands of other bees in the same yard. Then we must conclude that the queen has the ability to produce bees that are exceptional honey gatherers. Whether they are longer lived, carry heavier loads, fly farther and faster are all debatable questions and are of secondary importance. Worker bees are undeveloped females. Can the queen transmit that same quality of high-powered honey-gathering ability to her fully developed offspring, the young queen? I think she can.

Then let the beekeeper select that colony and raise some queens.

A great number of beekeepers are deterred from trying to raise queens because they have read in the different publications on queen-rearing, that they must get wax cell cups, hunt up an old queen cell to secure some Royal Jelly, then after thinning the jelly with saliva and putting a little in each cup hunt up some very young larvae and with a long transferring needle dip the larvae out of the comb and place in the royal jelly. I believe with the beginner he is likely to let the jelly and young larvae get cold or let the wind or direct rays of the sun shine too strongly on the larvae and the cells are not accepted by the bees. And I think the expert will have better success and raise better queens in the following way: Take a small piece of comb as large as your hand containing some select larvae of the proper age and with a sharp knife shave the tops of the

cells from one side of the comb, leaving the cells about one-eighth of an inch deep on the one side. Now cut the comb up in strips containing one row of cells. Next cut the strips into single cells. Take these single cells, and with a little wax to which has been added some resin, cement them to bars, leaving the shallow cell downwards, and give to some cell starting colony.

The colony to start the cells must be queenless, and better with no open brood. But the more hatching brood the better. A new swarm made queenless will start cells well. And in from two to twenty-four hours the cells will be drawn out from  $\frac{1}{4}$  to  $\frac{1}{2}$  inch long, when almost any strong colony will finish them if they are placed in the top as far as possible from the queen. Or if one cell with a couple of frames of sealed brood is placed in the top story of each colony and the bees given an entrance at the back, so as to get them used to going in and out through the rear entrance. Then when the cell is due to hatch, which will be in ten days from the time the cells were set up, place a bee escape board with the escape stopped up, or some other board of like nature, so as to cut off all communication with the rest of the hive, and the back entrance left as before. The young queen will hatch and will probably be laying there in about a week. When if the old queen in the bottom were killed this young one could be very easily introduced in the lower part of the hive as she will have the same colony odor or whatever makes the bees readily accept a new queen, and as one beekeeper said last year, "the beauty of it is they commence laying at once."



# Notes and Comments

By J. L. Byer, Markham, Ont.

THE wail of the ancient mariner, "water, water everywhere but not a drop to drink," might be paraphrased to describe present conditions to read, "Clover, clover everywhere but no nectar for the bees to get." At least this is the case in our home district at date of writing these notes (June 19th) and correspondence from other parts of the Province indicates a light flow from clover in localities where it is not doing anything at all.

If anyone could explain just why clover does not yield nectar sometimes when at other times under seemingly more adverse conditions, it would be interesting even if not profitable. True, the weather has been extremely hot for some time—over three weeks at the least, but the ground is not dry under the rank growth of alsike that we have in a number of fields near us. Yesterday I was in our own plot of hay that is over half alsike and very rank in growth. Although we have had no rain for nearly two weeks yet the ground was actually wet on the surface when I pulled back the rank clover. I stood in the field for 10 minutes and although 150 colonies of bees were within a quarter of a mile I only counted four bees in that time although hundreds of small wild bees seemingly gathering pollen were present on the blossoms. Mr. J. D. Olver of Fenelon Falls, writes me today that white clover is acting the same up there, and when I was at the yard near Mr. Olver on the 11th of June I found the ranches white with clover but not a single bee on the bloom. Guesses are in order as to why this is the case, and honestly in so far as "yours truly" is concerned, any information I could give on the question would most assuredly be only a guess.

\* \* \*

## Indoor Wintering Finds Favor.

Locally, bees as a rule are in none too good condition to take advantage of a clover flow even if nectar did yet take a notion to come into the flowers. After the fruit bloom was over, strong colonies suddenly lost the majority of the field bees and now such colonies are made up largely of bees too young to work, and the combs are full of brood. From observation I find this condition pretty general around here and from Mr. Storer of Lindsay I find the same conditions in that section also. Bees in our yards near Cold-

water are in better shape than here at home as with sugar stores they had less winter breeding than here, where they wintered on buckwheat, much of which proved poor stuff unfortunately. But although I have been an advocate of outdoor wintering in preference to cellar wintering, I must confess that this year the bees up at Fenelon Falls that were wintered in the cellar are the strongest of any of our bees. Placed on stands on April 21st, very strong with bees and very short of stores in many cases, yet they simply boomed ahead and when clover opened the majority of the colonies occupied three full depth 10 frame L. hives. Possibly the peculiar spring was in favor of the bees wintered inside, but the facts are as stated and I do not attempt to explain the why and wherefore.

\* \* \*

## Buckwheat Prospect Good.

If soaking rains come inside of the next ten days, this part of Ontario will see the largest acreage of buckwheat ever sown. The late wet spring made it impossible for early seeding and shortage of help was also a great hindrance to working the land under adverse conditions. As a result hundreds of acres were not sown and now in many cases hired tractors are breaking up these fields and the owner of the land follows up with land roller, cultivator, etc. But ground is hard and getting dry on top so good rains are urgently needed. With clover acting balky naturally we are thinking more of buckwheat to help out, so here is hoping that Jupiter Pluvius gets busy and helps the situation.

\* \* \*

## The Price of Honey.

The writer was present at the Victoria Co. Beekeepers' Association in convention at Lindsay on May 24th and among other questions of interest, the matter of prices for honey was discussed. After much discussion the price agreed upon as fair ranged a bit less than last year. While the report of the Honey Crop Committee will be looked for as usual and accepted as good advice, yet it was thought best to have an understanding, as often early local sales are made before the report is received. The feeling was general that lower prices were desirable provided other articles were lowered also, but with everything else high in price naturally honey could not be made an exception. Personally we are tired of

the orgy of high prices and I suppose thousands of others are in the same state of mind, but how are we going to remedy the condition is the question.

\* \* \*

## Skunks and Bees.

O. L. Hershisier of Kenmore, N.Y., has an article in a recent issue of "Gleanings," protesting against legislation recently enacted in his state, that protects skunks in a class with other fur bearers. He argues that the harm the skunks do to bees more than makes up for any loss to the state by less pelts for the future. No question but that skunks like bees and they will soon clean up a colony, too, as they visit the same hives every night killing off the field bees in early spring, and they also visit the hives in late fall as well, killing many bees and also disturbing them when they should be left quietly alone.

Strange that although skunks like bees, yet the bees will soon kill a skunk if he gets in front of a hive on a warm day and cannot get away. Quite often we have caught skunks in traps and if the day following was warm and we were not there early in the morning, the skunk would be stung to death and there is never any odor either under these conditions. Twice this spring we have had skunks alive in the traps and when trying to take them from the yard by means of dragging them on a pole to which trap was attached, the skunks happened to disturb a colony and then there was something doing. In one case the skunk was dragged away badly damaged but still in the ring, while with the other one, the skunk was dead in a few minutes after the bees tackled him. So if you happen to catch a skunk and do not know how to kill him without exciting the skunk to share up his perfume with you, simply place him in front of a strong hive and allow the bees to execute their enemy.

## A Japanese Bee

In writing recently to The Beekeeper Mr. Hiratsuka, whose photo appears on page 191, tells us of a strain of bees native to Japan that are kept in some parts of the country and that he himself has kept. These bees do not cross with Italians, thus there are no hybrids amongst them. The comb cells of this native bee are smaller than those of the Italian, and both combs and cappings are pure white. They gather no propolis at all, and Mr. Hiratsuka thinks that comb honey from them is better than that from the Italians.



## Location of an Apiary

BY HENRY W. JONES, BEDFORD, QUE.

IN locating either a large or small apiary the points to be considered are, first, convenience and accessibility of location, second, arrangement of hives, and thirdly, safety of the public. To begin with, the bee yard should be located in such a place that it will be sheltered from the north and east winds as far as possible. This can be arranged by placing the hives in the lee of the house or outbuildings or with a hedge or clump of trees intervening. The entrances should face to the east or south in order to prevent cool winds from blowing into the hive. At swarming time it will be a great deal easier to keep track of swarms and to keep "an eye" on the bee yard if it is located so as to be in plain view from the house. If there are many colonies and there is much handling of hives between the apiary and the honey house or place where the inside work of the bee yard is done, it will be found to be a convenience to have the apiary fairly close to the building to save handling and time. In this connection a wheelbarrow will be found to be almost indispensable. Where there is an orchard that is not too far away, this will be found to be a very good place for a bee yard, as the low hanging branches afford a good nearby place for the bees to alight on at swarming time and the hives are also protected from the direct rays of the sun during the hottest part of the summer.

In the apiary the hives should be placed in rows facing uniformly in the same direction. The rows should be at least six feet apart and the individual hives should not be set nearer together in the row than three feet. They can be set at equal distance throughout the row, or, a better arrangement still is to set them in a series of two and three each, each unit of two or three being spaced closer together than the interval which separates them. A bee marks its hive by its location and in quite a large yard with the hives arranged in uniform even rows, there is inclined to be almost too much of an evenness and similarity to give each hive a characteristic of its own; this, however, is sometimes unavoidable in a large yard.

It will be found in the summer that the grass will grow up very quickly in front of the hive entrances and thus hinder the free inward and outward movement of the bees. Various remedies are adopted for this, the idea being to arrange a way by which the grass can easily and quickly be kept down. One way is to lay a piece of rough, unplanned board down in front of each entrance, on the ground. This prevents the grass from growing entirely and at the same time affords a lighting place for the bees, another

way is to elevate the four corners of the bottom board a short way from the ground by means of pieces of brick or small stones. A scythe can then be used freely and the grass can be kept down while at the same time the bottom board will be kept away from the ground and dampness, and will not rot away so soon. A combination of the two ideas ought to be good as the board could be laid down from the ground up to the hive entrance, while at the same time the bottom board would be kept off the ground an inch or two. A quite common practice in large apiaries is to keep a few sheep. So far as keeping the grass down goes they are perhaps the best way that there is and as their wool protects their body from bee stings they are not in any danger except around their faces, and when bothered by bees they have a habit of taking refuge in the nearest bush, or of rubbing their faces along the ground, a practice which soon discourages the bee. At the same time, however, sheep should, if used in a bee yard, be given free opportunity to get away from it if the occasion should arise.

An apiary should not be placed too close to a main highway or public thoroughfare. A distance of about one hundred feet is considered safe. If, however, conditions are such that one is compelled to locate beside a much used path or roadway, a board fence should be put up about ten or twelve feet high. This will keep the line of flight high enough to be above the heads of ordinary traffic.

Another item which it would be seasonable to mention at this time, is the question of supplies. One of the greatest faults with the average beekeeper is to postpone ordering the supplies which he will need in the coming season until too late. It cannot be too strongly pointed out that the proper time to buy supplies, no matter what the quantity is, is not later than the early spring. We can all figure out beforehand approximately how much we will need in the way of foundation, sections and hives and so on, and if the smoker or other part of the equipment has worn out, we may as well get another one now instead of waiting until we absolutely need it, and then having to wait to get it before we can use it. This is the complaint made by the supply manufacturer that the beekeeper waits almost until the bees are hanging on the bushes before they place an order, notwithstanding that they have had several other months to do it in, and when the supplies that are so urgently needed do not come by return, they follow the order up with a kick, forgetting that there are probably a hundred or so other beekeepers who have put off ordering supplies until the very day that he did, and who are in a similar predicament. So order your supplies early and get all ready for the honey crop so as to make the most of it when it actually arrives. If one has not ordered quite

enough one can send in a small second order when the season has begun and get it filled more promptly than if one waited until the last and then sent in a large order for everything. Besides, goods shipped early can be sent by freight, while goods wanted quickly must go by express at a high charge for transport.

## Middlesex Beekeepers Hold Field Day

The apiary of Mr. D. Anguish, of Lambeth, was the rendezvous of the Middlesex beekeepers on June 11, where an excellent field meet was held. About one hundred beekeepers, male and female, were present. The weather was ideal, the lunch provided was excellent, and the genial presence of Mr. Anguish as he moved about amongst the crowd made each one feel at home.

The principal speaker was Mr. James Armstrong, who, with a hive of bees, gave a very practical talk and a demonstration on the control of Foul Brood. The Department, Mr. Armstrong said, wished to help every beekeeper to get rid of Foul Brood. The best and surest way he declared to clean up A. F. B. was to destroy the combs. The best cure for E. F. B. is to Italianise your bees. It always pays, Mr. Armstrong said, to do this.

Prof. Caesar of the Ontario Agricultural College gave an interesting talk on the value to the farmer and fruit grower of certain insects which are commonly considered injurious. A continual warfare is maintained between the destructive and non-destructive insects, he declared, and it is when the latter are destroyed and the balance of nature disturbed that the former have freedom to exercise their destructive propensities. The Professor made special reference to bee keeping and fruit growing as specially adapted to go together, the bees being necessary for the carrying of pollen for the fertilization of the fruit trees.

The president of the Middlesex Beekeepers' Association, in the course of a short address, said that the present system of eliminating foul brood was inadequate and more government assistance he said was required. He also thought beekeepers should be licensed.

With a view to controlling foul brood in apiaries two orders-in-council have recently been passed by the Government of British Columbia. The first provides for the issuing of certificates of inspection to apiaries and requires bee-keepers, or other persons who sell, barter, or give away colonies of bees, or of any comb, honey, or appliances in connection with the same, to produce a certificate of inspection as to freedom from disease. The second order prohibits the movement of bees within the province unless such bees, and the premises where they are kept, have been examined by an inspector under the provisions of the Foul Brood Bees Act within a period not exceeding thirty days before such movement.

The honey crop of British Columbia for the year 1918 very closely approximated 225 tons, an increase over the 1917 production of 65 tons, and constituting the biggest yield in the history of the province.

The largest apiary in British Columbia numbers 125 colonies, which produced in 1918 nine thousand pounds of honey, worth at the lowest wholesale quoted price \$2,520, while the total capital invested probably did not exceed \$1,500.



Middlesex beekeepers at the field day demonstration held at the apiary of D. Anguish Lambeth on June 11. A large crowd was in attendance. Mr. Anguish has 160 colonies at his home yard besides three outyards of nearly 100 colonies each. (Photo courtesy Farmers' Advocate.)





A Japanese beekeeper and his wife. Yasua Hiratsuka is an enthusiastic beekeeper in the land of the chrysanthemum. In his district three banded and golden Italians find highest favor with hybrids taking second place. Mr. Hiratsuka had an article on Japanese honey in the May issue of the Beekeeper.

## Beekeeping for Women

**I**S beekeeping an industry in which women and girls can engage with pleasure and profit? The Irish Bee Journal has the following to say on this subject, which will doubtless interest readers of The Beekeeper:

Before the war, the cult of the honey bee was recommended for women, and we all knew that their touch was gentle, that they had a fine sense of the fitness of things, and instinct for details, and, withal, a love of the picturesque and the beautiful. We believed that such qualities should contribute to good beekeeping and that, among neat and well-kept hives, in a garden of flowers, woman would look her best. Moreover, the bees would tempt her to, and keep her in, the fresh and open air, which would be excellent for her and the race.

But none of us then realized to what heights of devotion, to what extraordinary developments of physical courage and strength, she would attain at the call of duty and of pressing need. The war has shown us that there are few, if any, qualities of strength, courage, and perseverance displayed by man, in which woman cannot show equal, if not superior, gifts. If there were any doubts of her aptitude for an industry like beekeeping, there are no misgivings now. We have learned that she excels in all those qualifications which contribute to success in such an occupation.

Many persons think that beekeeping involves too much stinging to be entertaining, and is, therefore, unsuited to the gentler sex. But all who have experience of it know that stinging is generally the result of impatience and roughness on the part of the operator, and that woman, being in these, as in so many other respects, man's superior, does not provoke the bees to sting, and so escapes.

"When greater perils man environ,  
Then women show a front of iron;  
And, gentle in their manner, they  
Do bold things in a quiet way."

This quiet way of doing bold things is the real secret of success in the management of bees. They, resenting roughness and timidity, are amenable to gentle treatment, and harmless to such as approach them tenderly, without fear. Woman's delicate touch, her "infinite variety," give her the

mastery here, as in so many other adventures.

It is, however, to the credit of beekeeping, as an industry for women, that it makes no excessive claims upon their physical endurance, strong and capable as we now know them to be. What are most required are gentleness—as already stated, judgment, and foresight. With these, it were possible for the "delicate woman, which would not adventure to set the sole of her foot upon the ground for delicateness," to engage in the industry with success, and to find in its fascinating interest, real rest and happiness.

"Her reason firm, her temperate will,  
Endurance, foresight, strength, and skill,"  
mark her out as specially gifted to handle bees with impunity, and to turn their wonderful industry to profitable account.

## British Market for Honey

Information reaching the Canadian Trade Commission from England points to a great demand for honey. Bee-keeping has been seriously interfered with throughout the British Isles by the inability to get suitable labor during the last three years, and through the extreme restrictions on sugar for winter feeding of bees. It is pointed out that the opportunity for the Canadian production this year will, therefore, be unequalled. Last year's crop in Canada approximated eight million pounds, and considering the mildness of the winter and the demands which have been made for new hives, it is not unreasonable to expect an increase of 5 per cent, should the weather in the next few months be fairly good and open. Producers may be assured of good prices.

The U. S. Department of Agriculture has issued two bulletins on the subject of wintering bees, embodying the latest ideas of Dr. E. F. Phillips and other apiculturists in the Bureau of Entomology at Washington. One of these bulletins is entitled "Wintering Bees in Cellars," the other "Protect Bees From Cold." Ask the U.S. Department of Agriculture, Washington, D. C., for these two bulletins.

## Re-Queening in the Late Summer Months

By H. G. Sibbald.

**T**HE importance of having vigorous young queens in our colonies for the spring and honey flow is generally conceded by all. To get them raised, mated and introduced is the question.

The plan I prefer and follow as far as time will permit is to re-queen gradually each week from June until October.

When the clover season is just on one or two frames of brood are raised from the brood nest of the regular colonies up into the supers. These after a week or ten days are taken with the adhering bees to form as many nuclei as are required. Queen cells are started about the same time the brood was raised to the supers, and are therefore ready to hatch about the time these nuclei are formed. So that each is given a ripe queen cell in a cell protector as soon as the nuclei are made. The cells are made and the queens raised by the Doolittle method from the best selected mothers. After ten or twelve days the young queens will be mated and laying and ready to introduce into any colony. To introduce catch the old queen and cage her for 12 to 24 hours in her own colony, then change her for the young queen in the same cage, giving the bees a chance to release her within a few hours.

Queens raised in your own yard are readily accepted, being young, laying and quiet.

As soon as a young queen is taken away from one of the nuclei another cell is given with a cell protector, and thus a constant supply is kept up during the season. If at the end of the season enough queens are not on hand it pays to buy young queens from a good breeder and have all, or nearly all, young queens for winter.

A plan I used before the Doolittle plan was adopted was to save good cells through the swarming season and re-queen as many as possible, and then with what was left take away the queen in August and let them re-queen themselves, looking through the hive and destroying the oldest cells, so as to have the queen hatch from younger larvae. This plan is easy, but not always sure; some would lose the queen, some mis-mate, and no selection was possible, and the stock seemed to become darker in color.

The hives used for nuclei are regular sized hives divided into three or four by nailed in division boards, an entrance made by boring with a  $\frac{3}{8}$ " bit, one entrance on each side and end of the hive. This permits these nuclei being used in the fall for uniting with weak colonies or several of them into one colony.

## The Life of the Bee

The Bee's a frump,  
Her form is plump  
And clothed in velvet fuzziness;  
When days are bright,  
In busy flight  
She goes about her buzziness.  
Though counted wise  
She fails to prize  
The weather's pleasant springiness;  
She's quite morose  
And awful close  
An elf of stingy stinginess.

Yet Maeterlinck  
Through pen and ink  
Has made her name illustrious,  
For, always mused  
With pollen-dust  
She's dustily industrious.

—Arthur Guiterman.





That the Bee Bug is no respecter of persons but numbers amongst its victims youth and age, male and female, is seen from the above photo of enthusiastic beekeepers taken on the apiary of Mr. Edgar Thomas at the recent field meeting of the Simcoe Co. Beekeepers' Association.

## HERE AND THERE WITH THE BEEKEEPERS

Short Reports of Ontario Conditions

### Kent Co.

June 25.

The hot weather and practically no rain for a month has put back the white clover and ripened the alsike. If present rains continue it may bring on the white clover and help out some. Colony on scale shows only one pound or so of an increase most days. G. A. DEADMAN.

### Carleton Place

June 26.

Apiaries in excellent condition; swarming easily controlled. The American foul brood that was prevalent last season seems to be well under control. Yield of clover honey so far not as good as expected on account of extreme heat and lack of moisture. The basswood is plentiful in this locality and heavily laden for bloom.

A. McTAVISH.

### Islington

June 26.

A cold wet spring when fruit and dandelion were in bloom prevented bees here from building up as they should. If this hot, dry weather continues the clover will soon dry out and we will have a honey failure, as there is nothing for the bees after clover. The few basswood trees that are left are going to bloom well.—J. D. Evans.

### Inglewood

June 25.

Only a light flow of honey up to date, although clover has been in full bloom for over 10 days. Too dry and warm and bees not as strong as usual after the old bees died off.—H. G. Sibbald.

### St. Eugene, Ont.

June 16.

Clover here is in fine shape for a honey yield if we get warm weather for the next three weeks. Bees are also in prime condition. Some colonies made a surplus of over 50 pounds of dandelion honey.—J. A. McKinnon.

### Zurich, Ont.

June 23, 1919.

Bees are in good condition. Alsike clover is in full bloom, but no honey is coming in on account of the dry weather. Prospects are poor for any light honey.—Jacob Haberer.

### Chatham

June 23rd.

The honey flow has been poor ever since alsike clover has been in bloom and indications are that there will be but little more from it. The weather has been excessively warm and dry. There is little or no white dutch clover in bloom yet. There does not appear to be much hope for a good honey crop, except we have abundance of rain and favorable weather conditions later.—W. A. Chrysler.

### Welland Co.

June 23.

Owing to unfavorable weather and an unusually short fruit bloom season, bees were not up to their usual strength at advent of clover harvest. Clover has been in bloom about ten days and storing is going strong. Yield will probably be nearly up to last season. One swarm so far in each apiary, one of which issued from one of our one pound packages put in hive on April 15th.—J. F. Dunn.



Part of the apiary of Edgar Thomas, Barrie, Ont., where the Simcoe Co. beekeepers held a Field Day on June 3.

### Little Britain

June 28.

Notwithstanding the fact that we are having ideal weather and clover in full bloom still honey is coming in slowly.

It seems to be the general impression that there is little nectar in the clover. Personally I attribute the trouble to the absence of bees of the right age to gather honey, as the result of a cold backward spring.—W. W. Webster.

## Simcoe Co. Beekeepers Hold Field Day

The apiary of Mr. Edgar Thomas, Barrie, Ont., was the scene of great activity on the afternoon of June 3rd, when the beekeepers of Simcoe Co. gathered for their annual demonstration field day. The weather was ideal and probably had a great deal to do in making the meeting such a great success. The arrangement of the program proved very interesting and helpful to the forty or fifty persons who found their way to this up-to-date apiary on the out-skirts of the town of Barrie.

The program was as follows:  
Queen Clipping—Henry Reid, Cookstown, Ont.; Mrs. J. Walker, Orillia.

Preparation for the Main Honey Flow—Edgar Thomas, Barrie.

Swarm Control—Pres. Fred. Smith, Craigvale.

Feeding and Feeders—Wm. Gardener, Gilford.

F. B. Treatment—C. W. Houghton, Newton Robinson.

Wintering—Ex-Pres. Denis Nolan, Bradford.

Wax Rendering—Sec. R. G. Houghton, Bradford.

All of the above subjects were well discussed by prominent and practical beekeepers, after which a very excellent repast provided by the ladies was partaken of, and a vote of thanks extended to Mr. and Mrs. Thomas for their kindness and hospitality.

## Our Correspondents

In this department of *The Beekeeper* we give a cordial welcome to all our readers to express their opinions on any subject of interest to beekeepers. The publication of a letter, of course, does not necessarily imply an agreement with the views expressed.

## Melting Cappings

EDITOR, *The Beekeeper*.—I note that in the Government report of the 1918 Beekeepers' Convention there is no word of my system of melting cappings, though I gave this in full. As it may be of interest to many of your readers I trust you may find space for it in *The Beekeeper*.

I have an old Gemmel wax press. I use a jack screw, but found I could not make a box strong enough to stand the pressure, so had the blacksmith put an iron band around the box and bored many holes in it. I use this as a wax press. I have an uncapping box five feet long and wide enough to hang the frames in. If the box gets too full of cappings it is simple enough to put an empty storey on top and fill it with uncapped frames. I leave the cappings as long as possible in this box, then I fill the press box, leaving them there never less than twenty-four hours under pressure. Then melt them in a boiler, leave over night to cool, and a cake of wax is ready next morning. I remelt in a power steam extractor.

When I mentioned my system at the convention several beekeepers claimed I was losing a lot of honey. To test this matter last summer I put all the wax through the solar extractor, which resulted in one lb. of honey to every one thousand lbs. of honey extracted. I will not bother with that pound any more.—J. D. Evans.

LUCAN, ONT.

THE CANADIAN HORTICULTURIST AND BEEKEEPER.

DEAR EDITOR,—Now I am writing to you I feel that I must give your paper a little praise, and that is only a spark of what I would like to say about it. I find it a valuable asset to me in my business as above, which is a combination for which it is printed. I am a beginner with bees and have gathered some very useful information from it which has helped me to the road to success. I look for your paper every month impatiently, and I generally make time to read it almost through as soon as I get it, before laying it down. Wishing you success with above, I am, yours truly,  
GEO. TUDDENHAM.

Market Gardener and Apiarist.

"Bee raiser" is a new one on us.—The Tillson Co., Ltd., Tillsonburg, Ont.



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**PRACTICAL  
QUEEN REARING**

is the title of the new bee book, cloth bound, 110 pages, finely illustrated, which has just been written by Mr. Frank C. Pellett, former State Apiarist of Iowa and well known bee-keeping writer.

For many years there has been a demand for a book which would give in concise form the many different methods of queen rearing, as the Doolittle, Pratt, Alley, Miller, Dines and others with variations as practised by the large queen breeders.

You have this in this new bee book.

Send for your copy now and learn for yourself how to rear queens from your best colonies to advantage. Variations of plans may be of great value also to queen breeders.

Price postpaid, \$1.00, or with the American Bee Journal, one year only, \$1.75.

(Canadian postage 15 cents extra.)

**AMERICAN BEE JOURNAL**  
HAMILTON, ILLINOIS

**Annapolis Valley**

Eunice Buchanan, Berwick, N. S.

In this part of the Valley all varieties, with the exception of Blenheim and Stark apples, have a heavy set of fruit. In two orchards where young Starks have been grafted over to other kinds the remaining branches of Stark have a fine set of fruit. Our conclusion is to use nitrate of soda very heavily on Starks, Blenheims and Kings.

The blossoms had almost all gone by June 16th, but on the mountain and on the sea shore they were about full at that time. There is practically no spot, but in some orchards the bud moths are numerous, and in the town orchards the canker worms are plentiful.

In three orchards of prominent growers near Berwick the leaves have been affected by black spot which as yet does not show on the young apples. Two of these orchards were well dusted and one was sprayed with soluble sulphur.

Bordeaux dust, and sulphur dust is being much used, but very little lime sulphur. One man who dusted had a cask of lime sulphur and used it on a portion of his orchard, 1 to 40, before the bloom. This lime sulphur burned the foliage, but his dusted foliage was perfect; also where he used soluble sulphur the leaves were very fine. Another neighbor who use soluble sulphur wholly last year and this, has no bud moth. This is strange because this man used very little poison. He has magnificent foliage and grows good crops of apples.

Where growers use nitrate of soda we would advise them to use one pound of acid phosphate to each pound of nitrate. According to Mr. Hill's book on the Rothamstead fertilizer experiments, which have now been going on for sixty years, nitrate

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Why not let us sell your fruit and vegetables for you? Years of experience have enabled us to build up a selling organization with very wide connections. We have the facilities and can secure for you the highest prevailing market prices at all times.

This month we can handle in any quantity

**Early Tomatoes** — **Raspberries**  
**Gooseberries** and **Black Currants**

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Untested .....	\$1.35	\$ 7.75
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Breeding Queens, \$6.00 each.

If you are thinking of requeening your apiary in July or August we can make you close prices on quantity lots and send them to you in small shipments as you need them. Let us know how many you want and when you want them.

We can supply pound packages of bees for July shipment. Order now.

**BEE SUPPLIES.**

We are making very prompt shipments of supplies of all kinds. Telephone or telegraph orders receive special attention.

**F. W. Jones & Son**

Manufacturers of Beekeepers' Supplies.

Breeders of Bees and Queens.

**BEDFORD - QUE.**

of soda has a deflocculating effect on the soil particles, and makes clay soils wet and sticky. This soda stickiness cannot be overcome by using lime, but it can be overcome with acid phosphate.

**Niagara District Notes**

By F. G. H. Pattison, Winona, Ont.

The past month has been a very fluctuating one in the fruit belt. Towards the end of May the weather turned a complete somersault, and from being wet and cold, changed suddenly to being dry and excessively hot. We have now (June 20th) had the latter conditions for over three weeks. All kinds of fruits blossomed well and appeared to be setting well, raising the expectations of fruit growers for a really good crop of fruit all round. But a sad change has come over the spirit of their dreams.

Bumper crops were predicted of sweet and sour cherries, peaches, plums, and small fruits, but it is evident that such predictions are not going to be realized. From Grimsby Park to the Niagara River peach trees have suffered from the worst attack of curl leaf ever experienced in the district. From Grimsby Park to Hamilton the attack is much less severe, only orchards where early spraying was neglected being seriously affected, and of these there are not a great many. Reliable growers estimate the loss to the peach crop between Grimsby Park and the Niagara River at from 40 to 50 per cent. Sweet cherries have suffered much from brown rot in the buds, also the excessive heat coming so suddenly seems to have cooked a considerable portion of the sweet cherry blossoms, causing them to shrivel up and drop off. Plums, too, have had a heavy drop, but have not suffered as badly as peaches or cherries. Bartlett and Keiffer pears seem to be hanging on well, but Duchess and some of the other varieties have had a heavy drop. The sudden hot weather, too, has been very prejudicial to the strawberry crop, now in full swing, causing premature ripening and, if we do not get copious rains soon, the material shortening of the crop, all varieties

coming in at once. A continuance of the dry, hot weather will also seriously affect the raspberry crop. Gooseberries and currants are standing it better where well cared for. The apple crop in the Niagara district seems likely to be below the average, but it is rather early yet to make a definite pronouncement as to this. Grape vines look the best of all. They are for the most part growing vigorously and blooming well. A few vineyards show some yellow in the foliage, but so far this is not serious. During a residence of over 35 years in this district this is much the hottest June that I can remember.

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Either northern or southern bred for July and August delivery. 1—\$1.25; 6—\$7.00; 12—\$12.00; 50—\$45.00; 100—\$80.00. Safe arrival and satisfaction guaranteed.

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**North Carolina Bred Italian QUEENS**

of Dr. C. C. Miller's strain of Three-band Italian Bees. Gentle and good honey gatherers. July 1st. to October 1st.—Untested, \$1.10 each; \$11.00 per doz. Tested, \$1.60 each. Select Tested, \$2.25 each. Safe arrival and satisfaction guaranteed. Capacity six times as many queens as last year.

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R. F. D. No. 2,

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**I. F. MILLER'S STRAIN Italian Queen Bees — For Sale**

By return mail or your money back. Northern bred, for business from my best SUPERIOR BREEDERS; gentle, roll honey in, hardy, winter well, not inclined to swarm, leather color.

Queens a specialty, twenty-five years breeding experience. Safe arrival and satisfaction guaranteed.

Unt., \$1.00; 6, \$5.50; 12, \$10.00.

Sel. Unt., \$1.25; 6, \$6.75; 12, \$12.00.

I. F. MILLER, R.F.D. No. 2, BROOKVILLE, PA.

**Three Banded and Golden Italian Queens**

Untested—\$1.00 each; 6 for \$5.00; 12 for \$9.00.

Selected Untested — 1 for \$1.25; 6 for \$7.00; 12 for \$14.00.

Send for Price List. Cash with order.

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Queen Breeder RIDGETOWN, ONT.

**Mr. Beekeeper! Which Do You Prefer?****Black Queens**

that are so good at playing hide and seek when you want to find them in the wing-clipping season.

**Old Queens**

that stop egg-laying in the fall of the year so early that you have principally aged bees to go into the winter with, the result being SPRING DWINDLING.

**Black Bees**

that are excitable and run out the entrance of the hive as soon as you open the cover; that sting at every opportunity; and that lay right down on the job and die when EUROPEAN FOUL BROOD attacks them.

**Italian Queens**

that stick right on the comb and even continue laying eggs when the frame is lifted, and are so readily seen when looking for her in clipping season.

**Young Italian Queens**

that continue egg-laying until quite late in the fall, even though there is no honey flow, giving you a good bunch of fresh young bees to go into the winter, bees that have sufficient vitality when spring comes to nurse the new brood and gather EARLY pollen, while the queen is on the job EARLY in the spring ensuring a GOOD STRONG COLONY of bees for the first honey.

**Italian Bees**

that stay on the combs and can be handled with a minimum of smoke or discomfort because of stings, and that WHEN ATTACKED BY EUROPEAN FOUL BROOD ARE BETTER ABLE TO RESIST IT THAN ANY OTHER KNOWN BREED.

We specialize in Canadian-Bred **ITALIAN QUEENS**. For sale at fair prices:

Untested — 1 for \$1.00, - 6 for \$5.50, - 12 for \$10.00, - 25 for \$20.00, - 50 for \$37.50.  
Select Untested — 1 for \$1.25, - 6 for \$7.00, - 12 for \$13.00, - 25 for \$26.00, - 50 for \$50.00.

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# Grading Potatoes and Seed Selection \*

Guy G. Porter, Perth, N.B.

WE must select our seed potatoes with the utmost care, being sure to use nothing but sound tubers, of medium size, free from all diseases. We must also select seed of straight varieties and true to type. We are cursed in New Brunswick by planting mixed varieties, and as a result, we are receiving from 10c to 30c a 100 lbs. less for our potatoes in the large consuming markets than the Aroostook County Shippers (in Maine), who pay more attention to seed selection and the planting of straight varieties. Our seed potatoes are not only mixed, but as a rule, are grown from weak seed, and are of poor eating qualities. Certain varieties of potatoes are better to eat than others, just as certain apples are better than others. Moreover it is possible to grow varieties for boiling, others for baking and still others for starch. The production of potatoes of good eating varieties would not only be a surprise to 95 per cent of our population but would increase our per capita consumption of this article. We have found the good eating apples, but we have neglected the good eating potatoes. Uniform and shapely potatoes are much more economical than the general run of mixed and unshaped tubers now found in our market, because they can be peeled thinly with the minimum percentage of waste and the best food elements of the potato lie close to the skin.

If you plant mixed varieties and unshaped potatoes you cannot help but raise a mon-

\*Extract from an address on potato grading delivered at the recent convention of the New Brunswick Potato Growers' Association held at Woodstock, N. B.

grel crop. It is impossible for the grower to deliver to the potato buyer a good, clean, smooth crop from such seed, as he will have a crop of mixed varieties, all shapes and sizes, including cuts and damaged tubers and marbles, which should have been kept on the farm for stock feeding. The consumer has been getting a large percentage of trash in his potato basket, and there is little wonder he only eats the equivalent of one normal potato daily. And there is little use in asking him to eat more until we can make it worth his while in better quality and value. Therefore, let us begin to grade our potatoes, by selecting the seed properly.

## Grading and Cultivation.

It is important that good, clean ground be selected, in which there are no contagious diseases carried over from season to season. All good growers, I believe, recognize

## Canadian Bred ITALIAN QUEENS

Untested after June 15th., \$1.25 each; \$12.00 a doz. Tested, \$2.00 each. Choice breeding queen—\$5.00. Tested breeder—\$10.00

I guarantee you a square deal.

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## MOTT'S Northern Bred Italian Queens

have proved for the last 12 years to the Canadian friends to be the best of E.F.B. resisters. Hardy, hustlers and gentle.

Sel. tested, \$2.00; Unt., \$1.00; 6, \$5.50. 12, \$10.00.

Plans "How to Introduce Queens and Increase," 25c. Lists free.

**E. E. MOTT** Glenwood, Mich.

# HONEY WANTED

When you are ready to sell your HONEY, send US a sample. We are always buyers.

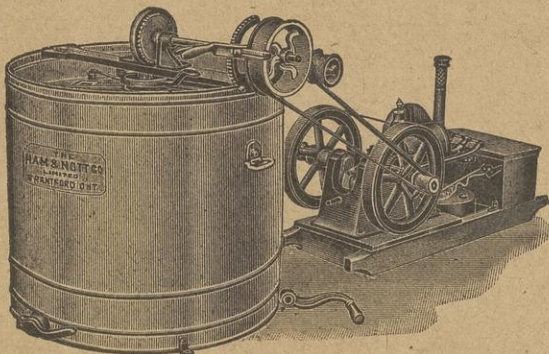
## FLAVELLES LIMITED

LINDSAY

ONT.

Canada Food Board License No. 156.

# Power Extractors



Cut gears or friction drive, with or without engine.

If you are considering a power outfit this season it will pay you to write to us at once.

**The Ham & Nott Company, Limited**

MANUFACTURERS OF BEE-KEEPERS' SUPPLIES

Brantford, Ontario

# Honey

We are in the Market to buy your Honey in large or small lots. Any quantity handled. Excellent prices offered.

**WAGSTAFFE, Limited**  
HAMILTON - Ontario

Canada Food Board License No. 14-262.



## Protection and Profit



8

When money is in a Savings Account in The Merchants Bank, it is absolutely safe from loss, as far as you are concerned. All the time it is here, it is earning interest—so that the bank actually pays you to let it take care of your money. Don't carry unneeded sums on your person or hide them at home. Protect them against loss, theft and fire by opening a savings account.

## THE MERCHANTS BANK

Head Office: Montreal. **OF CANADA** Established 1864.

With its 119 Branches in Ontario, 37 Branches in Quebec, 1 Branch in New Brunswick, 2 Branches in Nova Scotia, 27 Branches in Manitoba, 41 Branches in Saskatchewan, 69 Branches in Alberta and 8 Branches in British Columbia serves Rural Canada most effectively.

WRITE OR CALL AT NEAREST BRANCH.

the importance of frequent and thorough cultivation. In dry seasons this conserves moisture and in wet seasons it prevents an abundant growth of weeds. By properly cultivating the potatoes are hilled up so that we get a minimum of sun-burn and frosted potatoes when digging. Any potato crop which is not properly cultivated will be stunted in growth. Therefore, cultivation is highly essential, and bears directly on the quality of the potatoes to be harvested. If you get a small stunted growth, it is impossible to grade them properly, for the general average is small, and even by throwing away a very large percentage of the small potatoes, it is impossible to have the balance present a good appearance.

### Spraying and Grading.

It is impossible to raise a good, clean crop of potatoes, without proper spraying with Bordeaux Mixture. It has been estimated by scientific men connected with the potato industry of this Province that 25 per cent of our crop is lost through preventable diseases, which could be controlled or almost eliminated by proper spraying. It has been shown that proper spraying increases the yield from 5 per cent to 20 per cent. Increasing the yield means potatoes of better size and quality. I fully believe that the increase in yield alone, from thorough spraying, will more than pay for the cost of spraying, and I also believe that the quality will be improved very materially. Improvement in quality is just as necessary as increase in yield. And I am strongly convinced that only as long as we produce the best quality of potatoes possible, with all our advantages of soil and climate, will we be able to hold first place in the potato industry in Canada.

Potatoes properly sprayed will keep much better in storage. I had an instance in our own business this fall, where we stored a carload of potatoes from a certain section, and the potatoes looked to be in first class condition when put into the warehouse in October. We loaded these potatoes out about three weeks ago, and were surprised to find that nearly 20 per cent of the potatoes were affected with dry rot. We took the trouble to find out who loaded these potatoes and found that they had not been sprayed. This convinces me that spraying is not only necessary, but profitable, as one of the most difficult jobs we have in grading our stock for market is taking out the dry rot, which can be prevented by proper spraying.

## To Fruit Growers and Farmers—

The Dominion Bank is prepared to give special attention to the accounts of fruit growers and farmers.

If you need money to improve your orchard or farm, consult the local manager of any of the following branches:

NIAGARA FALLS	-	-	J. B. A. O'NEILL, Manager
ST. CATHARINES	-	-	B. B. MANNING, Manager
WELLAND	-	-	W. D. S. FRASER, Manager

## THE DOMINION BANK

HEAD OFFICE

TORONTO

# "Black Leaf 40"

## Change in Prices Effective June 1st, 1919

We fully realize that a change in the selling prices of a standard commodity like our "Black Leaf 40" causes very considerable inconvenience to all parties in interest. It has long been our custom to "take the general-average" of profit over a period of years—rather than to make more frequent changes in price, in direct proportion to varying conditions in the cost of manufacture, etc.

In this connection you will probably recall that no advance was made in our prices for "Black Leaf 40" during the entire period of the recent War—a circumstance that was happily aided by the fact that we had accumulated some surplus stock of nicotine, thereby the better enabling us to absorb part of the increasing costs which we had hoped would be merely temporary.

However, the heavily increasing demand for "Black Leaf 40" has so reduced this surplus, and the present conditions relative to raw material, labor, supplies, etc., are such that we regret we must announce the following change in our prices, effective June 1st, 1919:

10 lb. tin	-	\$13.75 each
2 lb. tin	-	3.25 each
1-2 lb. tin	-	1.00 each

**THE KENTUCKY TOBACCO PRODUCT COMPANY**  
Louisville      Incorporated      Kentucky

## Northern Ontario

A vast new land of promise and freedom now open for settlement in 160 acre blocks to returned soldiers and sailors free; to others 18 years and over 50 cents per acre.

Thousands of farmers are responding to the call. Here right at the door of Southern Ontario a home awaits you.

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

H. A. MACDONELL,  
Director of Colonization,  
Parliament Buildings, TORONTO, ONTARIO  
G. H. FERGUSON,  
Minister of Lands, Forests and Mines.





For Gasoline Engines,  
Tractor, Auto or  
Stationary  
**POLARINE OIL**  
**STANDARD GAS**  
**ENGINE OIL**  
For Kerosene Engines  
Tractor or Stationary  
**POLARINE OIL**  
**HEAVY**  
**POLARINE OIL A**  
**IMPERIAL KERO-**  
**SENE TRACTOR OIL**  
**IMPERIAL KERO-**  
**SENE TRACTOR**  
**OIL EXTRA HEAVY**  
(Recommended by  
many tractor manu-  
facturers)



*A Correct Lubricant for every Farm Machine*



For Open Bearings of  
Farm Machinery  
**PRAIRIE**  
**HARVESTER OIL**  
—very heavy body,  
resists cold, won't  
thin out with  
moisture  
**ELDORADO**  
**CASTOR OIL**  
—a thick oil for worn  
and loose bearings

## NO ONE LUBRICANT WILL DO FOR ALL

Farm machines differ in structure and in service and so require different types of oils and greases. Farm tractors require different lubricants from trucks and automobiles—different parts of the same engine or motor having different duties to perform cannot be properly lubricated with the same oils and greases. Good lubrication will save you hundreds of dollars every year over poor lubrication. Imperial Farm Lubricants provide the right kind of oil or grease for each farm machine.

From the Imperial Line you can select a lubricant that gives the greatest operating efficiency for each.



Look over the Imperial brands recommended here. These names are all recognized by Canadian farmers as standards of high quality. Imperial Farm Lubricants are scientifically formulated and carefully made. There are no superiors and few equals. Properly used they will increase the years of service from your automobile or tractor and all the other machines on your farm. Imperial Lubricants come in one-half, one and four-gallon sealed cans; in steel half barrels and barrels. The kind you want in the size you need can be delivered to you promptly anywhere at any time.



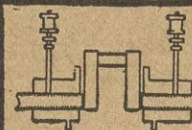
For Steam Cylinder  
Lubrication,  
whether Tractor or  
Stationary Type.

### CAPITOL CYLINDER OIL

—the standard pro-  
duct for steam  
cylinder  
lubrication

## IMPERIAL OIL SERVICE

Even though you are using Imperial Farm Lubricants exclusively, we hope that you will talk over your lubrication needs with the *Imperial Oil man* near you. He is well posted on farm lubrication. Put his knowledge to the test.



### THRESHER HARD OIL

For Grease Cup  
Lubrication of  
Bearings, a clean  
solidified oil high  
melting point.

# IMPERIAL OIL LIMITED

Power · Heat · Light · Lubrication  
Branches in all Cities



We have a large  
stock of all sizes  
**FLOWER POTS**  
**FERN OR BULB PANS**  
**AZALEA POTS**  
and Rimless Pans

Orders Filled Promptly.

Send for Prices

**THE FOSTER POTTERY CO., Ltd.**  
HAMILTON, ONT.

# SEEDS

Wholesale

**Improved Farm Root Seeds**  
**Improved Vegetable Seeds**  
**Improved Flower Seeds**

Seedsmen please enquire for our SPECIAL PRICES  
"Licenses are not now required for the export of  
Vegetable Seeds to the British Colonies".

**KELWAY & SON, Wholesale**  
**LANGPORT, England**  
Cable Address: KELWAY, LANGPORT

# Deafness



Perfect hearing is now being re-  
stored in every condition of deaf-  
ness or defective hearing from  
causes such as Catarrhal Deaf-  
ness, Relaxed or Sunken Drums,  
Thickened Drums, Roaring and  
Hissing Sounds, Perforated,  
Wholly or Partially Destroyed  
Drums, Discharge from Ears, etc.

## Wilson Common-Sense Ear Drums

"Little Wireless Phones for the Ears" require no  
medicine but effectively replace what is lacking or  
defective in the natural ear drums. They are simple  
devices, which the wearer easily fits into the ears  
where they are invisible. Soft, safe and comfortable.  
Write today for our 168 page FREE book on DEAF-  
NESS, giving you full particulars and testimonials.

**WILSON EAR DRUM CO., Incorporated**  
1021 Inter-Southern Bldg. LOUISVILLE, KY.



**APPLE BARRELS**

New standard-machine made, best quality. Delivered anywhere in Ontario and Quebec. Write for prices. Contracts made with Fruit Associations and others.

**Sarnia Barrel Works**

SARNIA : : : ONTARIO.

**The Fruit & Produce Market**

The Commission firms undernoted wish consignments of fruit and general produce. They will be pleased to have you write them for information, shipping stamps, etc., if you have fruit or vegetables for sale.

**H. J. ASH**

44-46 Church St. - Toronto, Ont.

**CONSIGNMENTS OF FRUIT AND VEGETABLES SOLICITED**

Shipping stamps furnished on request  
Canada Food Board License Nos. 3-043, 3-044 and 3-517.

**DAWSON-ELLIOTT CO.**

32 West Market St., Toronto, Ont.  
Wholesale Fruit and Produce Consignments Solicited.

Canada Food Board License No. 3-045, Class II., Div. B., and 3-046, Class II., Div. C.

**PETERS, DUNCAN Limited**

88 Front St E., Toronto, Ont.

See advertisement on page 178.

Canada Food Board License Nos. 3-007, 3-008 and 3-009.

**POULTRY YARD****Chickens on the City Lot**

Chickens may be kept on a city lot at a profit. The waste food from the table of the average family, in addition to a little grain, will feed enough fowls to furnish the needed fresh eggs for the family. With good hens and careful attention to houses and yards, a piece of ground 25 x 50 feet will accommodate enough hens to produce as many fresh eggs as the average family will consume, besides a considerable number of broilers. It must be understood, however, that the chickens will require daily attention throughout the year. The feeding must be done regularly and intelligently and the premises be kept clean and sanitary.

It is not necessary that a chickenyard should be a disfigurement to the back premises; on the contrary it may be made a thing of beauty as well as profit on the town lot. Do not make the chicken yard a nuisance ground, or dumping place for old shoes and tomato cans. Chickens do not thrive on such things. The spectacle of a chicken yard made into a dumping ground for rubbish and the chickens treated as scavengers is disgusting, and should not be tolerated in any community.

A nice flock of chickens properly cared for and housed, and yarded in becoming style, may become an attractive feature

of the vacant lot; and besides furnishing fresh eggs daily will afford a mental diversion to some of the older people and a pleasure to the younger members of the family. Young boys and young girls of the town, lacking something to do, will find in a flock of chickens interest and instruction. The more ambitious youngster will find opportunity for a study of problems that are of absorbing interest to all students of plant and animal breeding; for though the chicken is a chicken, it is subject to the same laws of heredity as are plants and live stock in general. Profit, therefore, may be realized in different ways from chickens on the city lot when given proper care and attention.

**Don't Wash Eggs**

THE United States Department of Agriculture estimates that approximately 5,016,000 dozen eggs spoil needlessly every year in cold storage because they have been washed before sending to market. Packers in Canada have protested again and again against the washing of eggs intended for cold storage. Careful investigation of large quantities of stored eggs show that from 17 to 22 per cent of washed eggs become worthless in storage, whereas only four to eight per cent of dirty eggs, stored unwashed, spoil.

MC DOUGALL'S  
**KATAKILLA**  
NON-POISONOUS  
THE PERFECT  
INSECTICIDE  
for  
FRUIT, FLOWERS  
AND VEGETABLES.



MANUFACTURERS: MCDUGALL BROTHERS, LTD;  
66/68 PORT STREET, MANCHESTER, ENGLAND.

**FIRSTBROOK BROS.  
LIMITED**

Boxes

AND

Shooks

SINCE 1867

Fruit Boxes

TORONTO

CANADA



The explanation is simple. Water removes from the shell of the egg a gelatinous covering which helps to keep air and germs out of the inside of the egg. Once this covering is removed by washing, or rain which gets to eggs in the nest, germs and moulds find ready access to the contents and spoil the eggs.

### Kill the Mites

The head louse which lives particularly on little chickens has been exterminated in experimental trials at the Ohio Experiment Station with mercurial ointment or "blue butter." This contains about 50 per cent of metallic mercury which kills the head lice. Mercurial ointment is a stiff substance and should be mixed at the rate of one part to two parts of vaseline to apply easily. A bit of the mixture the size of a pea applied with the tip of the finger and rubbed into the feathers about the head will destroy the lice. It should not be used too freely.

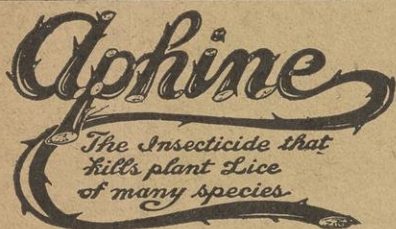
### A Few Don'ts

F. C. Elford, Dominion Experimental Farm.  
Don't think that good chicks can be obtained from poor stock.

Don't forget that grit is the hen's teeth.

Don't forget that a broody hen setting a few hours on fertile eggs spoils them for eating.

Don't forget that eggs are porous and will absorb bad flavors if they are placed near them.



A concentrated liquid which, when diluted with water as per directions on can will prove a wonderful weapon of defense to guard house or garden plants, vegetables, fruits or flowers from the ravages of Aphids (Green Fly) as well as thrips, soft scale, currant worm, and cabbage slugs. Fully guaranteed and sold by all seedsmen.

#### Fungine controls rust and mildew

Accepted by successful gardeners everywhere as the standard remedy for the control of mildew, rust and various other fungi that attack vegetables, fruits or flowers. Does not stain foliage.

#### Vermine destroys worms, maggots, etc.

Good for potted plants, in which it destroys eel and angle worms as well as for sterilizing the garden soil which it rids of maggots, grubs, worms and root lice.

Above three remedies have been on the market for many years and are for sale at all seed stores. For further particulars apply to

**APHINE M'F'G. CO.**

Madison

New Jersey



### The Model Kitchen

Everything up-to-date—especially the stove—the most important part of the kitchen equipment. That is why the successful housewife chooses the New Perfection, the oil stove that saves time, labor and worry—that cooks all recipes to the height of Perfection.

The Long Blue Chimney Burner on every stove makes clean intense heat. It concentrates it all directly under the utensil—none wasted. And because the combustion is perfect there is no smoke or odor.

The New Perfection does everything a gas stove does—is as easy to regulate. 3,000,000 are now giving satisfaction to just so many housewives.

Burns Imperial Royalite Coal Oil, the most economical and efficient oil fuel.

Ask your dealer about the New Perfection. Have him demonstrate at your convenience the advantages of the Long Blue Chimney.

For Sale by Dealers Everywhere

**NEW PERFECTION**  
THE ALL SEASON  
OIL COOKSTOVES

**IMPERIAL OIL LIMITED**

Power - Heat - Light - Lubrication  
Branches in all Cities



**We Solicit Your  
Consignment**

Send for  
Shipping Stamp

## Fruit and Vegetables Solicited

**We Get Best Prices**

OUR facilities enable us to realize top prices at all times for your fruit, vegetables or general produce. Aside from our large connection on the Toronto Market, we have established branch warehouses with competent men in charge at Sudbury, North Bay, Cobalt and Timmins. In time of congestion on the Toronto market we have a ready outlet through these branches. We never have to sacrifice your interests.

Canada Food Board License Nos. 3-007, 3-008 and 3-009.

Branch Warehouses:  
Cobalt and Timmins.  
Sudbury, North Bay,

**PETERS, DUNCAN LIMITED**  
88 Front St. East, Toronto



References: The  
Bank of Nova Scotia,  
King and Victoria  
Branch, and Com-  
mercial Agencies.



## OTTAWA LADIES COLLEGE

*New Fireproof Building*

Academic work up to the first year University. Seven successful applicants for matriculation last term without failure in any subject.  
Music, Art and Handicraft, Household Arts, Physical Culture, etc. Ample grounds. The capital offers exceptional advantages.

For Calendar apply to J. W. H. MILNE, B.A. D.D., President.

## ONTARIO LADIES' COLLEGE

WHITBY - ONTARIO

Public School to Second  
Year University,  
Household Science,  
Music: Instrumental,  
Vocal,  
Commercial,  
Elocution, Art.

School Re-opens Sept. 16, 1919

Civic and Parliamentary  
Studies, Gymnasium  
Work and Swimming.

For Calendar apply to  
Rev. F. L. Farewell, B. A.  
Principal, 94



# THE WESTERN FAIR

LONDON, ONTARIO

September 6th to 13th, 1919

This is the great Agricultural Exhibition of Western Ontario.  
Fruit and Flower growers and exhibitors will find very attractive classes in our Prize List.

Full program of attractions twice daily.

Johnny J. Jones Exposition on the Midway.

Prize List, Entry Forms and all information from the Secretary

Lt.-Col. W. M. GARTSHORE, President

A. M. HUNT, Secretary

## Profits in Peach Growing

The financial history of a twelve year old peach orchard in Michigan is dealt with in the most interesting way in Special Bulletin No. 94, issued by the Michigan Agricultural College Experimental Station, of East Lansing, Mich. The orchard described is one owned by Messrs. J. K. Barden & Son, of Alleghany County, Michigan. It is located on a gravelly, sandy-loam soil in most parts but clay in a few. The sub-soil is clay and sand. The present orchard was set in the spring of 1907, and included trees of a number of different varieties of peaches. The bulletin gives a very complete record of the expenses and receipts of the orchard year by year. The expenditures during the 12 year period were \$7,831.37. The largest item was one of \$1,842.02 for packages and the second largest a charge of \$1,080.00 for interest on the land. The cost of such items as planting, the dormant and summer sprays, pruning, hoeing, trimming, picking, etc., is given in detail for each year.

The total returns from the orchard were \$19,094.42. The net profit was \$11,263.05. The average return per year was \$1,591.20 and the average returns per acre per year, \$106.08. The average cost per year was \$652.61 and the average cost per acre per year was \$43.50. The net profit per acre per year was \$62.57.

The authors of this bulletin, Messrs. H. J. Eustace and Barden, state that the orchard is still in excellent condition. It is believed that five or six more crops can be obtained from it before it becomes unprofitable. During the twelve year period there was a wide variation in the size of the crop and the prices received. These indicated that peach crops of uniform size cannot be depended upon and should not

## FEED THE LAND

By using the best Manure and get

## GOOD CROPS

For Nurseries, Fruit Growers and Gardeners.

## Sure Growth Compost

(A Composition of all Natural Manures)

Makes poor land fertile and keeps fertile land most productive.

Supplied by

**S. W. Marchment**

133 Victoria St., TORONTO

Telephones: Main 2841. Residence, Park. 951

Say you saw this ad. in THE CANADIAN HORTICULTURIST

## Pack Your Hives

WITH

## GRANULATED CORK

Granulated cork is one of the best non-conductors of heat or cold, giving practically 100% insulation. It thus keeps a constant temperature in the hives.

Granulated cork is cork from which volatile oils and all moisture has been removed. It is then baked and ground fine.

Mr. J. F. Dunn, Ridgeway, Ontario, in The Beekeeper, November, 1918, states that he has used granulated cork with the greatest success for a number of years.

Write us for prices and information.

**Armstrong Cork and Insulation Co.**  
Limited

MONTREAL  
902 McGill St.

TORONTO  
11 Church St.



be expected. There was an even greater variation in the prices realized than there was in the yields of the orchard. The bulletin concludes with the statement that even were the orchard to be destroyed now it would have paid for itself.

### Favors the Trillium

Mr. J. H. C. Dempsey, of Hamilton, in a letter to The Canadian Horticulturist pointed out that in The United States, before a national flower was selected regard was taken to the selecting of a flower representative of all the states of the Union. As a Canadian national flower he suggests the Trillium Alba (three night shade), commonly known as the white lily or trinity lily. This, he believes to be the most suitable of spring wild flowers. It has a slight pleasant odor like a rare Japanese perfume. According to John Macoun, naturalist of the Geological and Natural History Survey of Canada, it is a habitat of all the provinces of Eastern Canada; and it is found in all the woods of the Pacific coast. The corm can be taken up when they are fading and transplanted and they will bloom the next season. It could be gathered by the school children and sent through the Canadian Club or some such society to Sunny France and planted on the graves. It will grow and bloom with no special attention. Mr. Dempsey makes a strong plea for this flower.

## Albert College

is more than a School  
— it is a Home

Where men and women are educated, trained and prepared to make full use of their talents and fit themselves for successful futures.

Everything that a good college calls for is found in Albert; and added to all is the uplifting and refining influence which comes from co-education.

Full courses under competent teachers in Literature, Music, Art, Expression, Theology, Physical Culture, Stenography, and Commercial.

School re-opens September 9th., 1919. Write for information or College Calendar to—

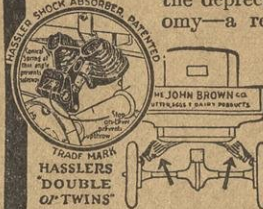
E. N. BAKER, M.A., D.D.  
Principal Albert College,  
Belleville, Ont.



### Shock Absorber

The Hassler Guarantee: "Absolute satisfaction or your money back."

**S**UPPOSE your garageman gave you a check for 30 cents every time you spent a dollar for tires and repairs? Suppose he gave you a check each year for a third of the depreciation you know has taken place in your Ford Car or Ford One-Ton Truck? It amounts to exactly the same thing when you equip with Hassler Shock Absorbers. At least 30% of your tire and repair cost is saved outright, because the road shocks and vibrations are cushioned before they reach the vital and weighty parts of the machine. This elimination of vibration also reduces the depreciation loss in the same proportion. There is real economy—a real worth while saving! Of course, you know how much more satisfactory your car will ride if you have Hasslers on it. The added comfort alone is worth far more than they cost.



#### 10 DAY TRIAL OFFER

Don't ride without Hasslers because someone tries to discourage you. They are a quality product—worth their price. The Hassler dealer in your vicinity will put them on for 10-days' trial. Your money refunded if you say so. Write for name of dealer and Trial Blank.

ROBERT H. HASSLER, Ltd.

182 Sherman Ave., North

Hamilton, Ontario, CANADA

For Ford One Trucks, Too!

**T**REES & SHRUBS  
**B**BROWN BROTHERS Co.  
NURSERYMEN LIMITED  
BROWNS NURSERIES, ONT.

### SKINNER SYSTEM OF IRRIGATION

Control complete. Prevents drought losses. Reduces labor bills. Increases profit. Special Portable Line for \$15.75. Send for new Bulletin.

THE SKINNER IRRIGATION CO.  
217 Water Street - Troy, Ohio.

## BARRELS

### Standard Size

### Government Specifications

Our barrels are not made from cull staves, but cut from absolutely mill run timber, with exactly the correct bilge and **thickness**. Heading mostly basswood, which takes a nice brand. Our barrels are **all made by machinery** which ensures an even croze and every **head fitting**. We make six and eight hoop.

Get ready for the big apple crop which is promised and order your barrels now. We guarantee our barrels, etc., first class in every respect and invite enquiries for prices and further particulars.

**THE YAMASKA COOPERAGE CO.**

Abbotsford, Que.



**FOR SALE and WANT ADS**

Advertisements in this department inserted at the rate of 15 cents a line, each line averaging seven words. Part lines count as whole lines, minimum of two lines accepted. Strictly cash in advance.

**BEES**

**QUEENS.**—Golden or three band—Each \$1.50; six \$7.50. Also nucleus. A. R. Simmons, Claverack, N.Y.

**HARDY ITALIAN QUEENS**, one \$1.00; ten, \$8. W. G. Lauver, Middletown, Pa., Route 3.

**"SHE SUITS ME."**—Italian queens, untested, \$1.15 each. For 10 or more, \$1.00 each. Allen Latham, Norwichtown, Conn., U.S.A.

**ITALIAN QUEENS**—Northern-bred, three-banded, highest grade, select, untested, guaranteed. Queen and drone mothers are chosen from colonies noted for honey production, hardiness, prolificness, gentleness and perfect markings. Price, 1, \$1.00; 12, \$11.00; 50, \$45.00. Send for circular. J. H. Haughey, Berrien Springs, Mich.

**QUEENS FOR SALE**—Three banded Italians, untested \$1; select untested \$1.25; tested \$1.50 each. Safe arrival and satisfaction guaranteed. Order early. H. A. McCarley, Mathis, Texas, U.S.A.

**SWARTS GOLDEN QUEENS** produce Golden bees of the highest qualities. Satisfaction guaranteed. Mated, \$1.00; 6 for \$5.00. Tested, \$2.00. D. L. Swarts, Lancaster, O., Rte 2.

**HONEY**

**HONEY WANTED**—Clover, Basswood; will ship you 60-lb. tins, and if in August we cannot agree on the price you can pay for tins. G. A. Deadman, Merlin, Ont.

**COMB HONEY WANTED AT ONCE**, also extracted. Quote lowest cash price delivered to L. A. Wigle, 368 Highland Ave., Windsor, Ontario.

**WANTED**—To purchase, comb and extracted honey. We supply containers for the extracted. State quantity for sale. Foster and Holtermann, Ltd., Brantford, Ont.

**REAL ESTATE**

**ALL KINDS OF FARMS**—Fruit farms a specialty. Write, stating requirements. W. B. Calder, Grimsby.

**FOR SALE**—FOUR FARMS IN FAMOUS Annapolis Valley, Nova Scotia, comprising about thousand acres and including two hundred acres of apple orchards. Excellent shipping facilities, via water and rail. Apply Box 22, Canadian Horticulturist, Peterboro, Ont.

**SEEDS, BULBS, PLANTS, SHRUBS**

**C. KEUR & SONS**, Hillegom, Holland. Bulbs of all descriptions. Write for prices. New York Branch, 32 Broadway, Room 1014.

**BEE SUPPLIES**

**TWO ALUMINUM HONEYCOMBS**, postpaid, \$1.86; 1 lb. bees, \$2.25; queen, breeder, \$2. Send for Label catalogue. Eastern Label Co., Clintonville, Conn.

**PERRY'S SEEDS**

Alpine and perennials, unique collection; many new varieties unobtainable from any other source.

Hardy and adapted for Canadian climate.

**HARDY PLANT FARM, ENFIELD, ENGLAND**

**Spraying Plants**

At this season of the year particular attention should be paid to the prevention of ravages by disease and insect pests. It is possible by a timely application of the proper sprays to control effectively many of our worst diseases and pests.

Spray materials may be divided into three classes. First, there are the fungicides, such as bordeaux mixture and lime sulphur wash, which are used to control or to prevent the development of fungous diseases such as apple scab and potato blight. Secondly, there are poison sprays, such as lead arsenate, for the control of biting insects such as the potato beetle, tent caterpillars, etc., and, thirdly, the contact sprays, such as kerosene emulsion or nicotine sulphate, for the control of sucking insects like plant lice.

By selecting the proper sprays under each of these three headings, a combined spray containing all three can be used and, thus, in a single application, one has a fungicide and a complete insecticide combined. A good combined spray is made up as follows: 4-4-40-bordeaux, consisting of 4 pounds unslaked lime, 4 pounds copper sulphate, and 40 gallons of water, to which is added 3 pounds of arsenate of lead or 2 pounds of arsenate of lime in paste form (if the dry form is used, use one-half this quantity) for controlling biting insects, and if aphids or plant lice are present, one-third of a pint of nicotine sulphate should be added or, as an alternative, the lime sulphur could replace the bordeaux mixture.

Do not delay the application until the disease or pest has become evident by its ravages, but make the application in time to prevent the damage. An application of spray is not a cure, it is a preventative.

Do not think that one application is sufficient. Remember that at this season of the year foliage grows rapidly and a large amount of new leaf surface is soon exposed after an application is made, and it is this new uncoated surface which is a source of infection. Three to four sprays during the season will be necessary to keep the leaves covered and the plants free from disease.

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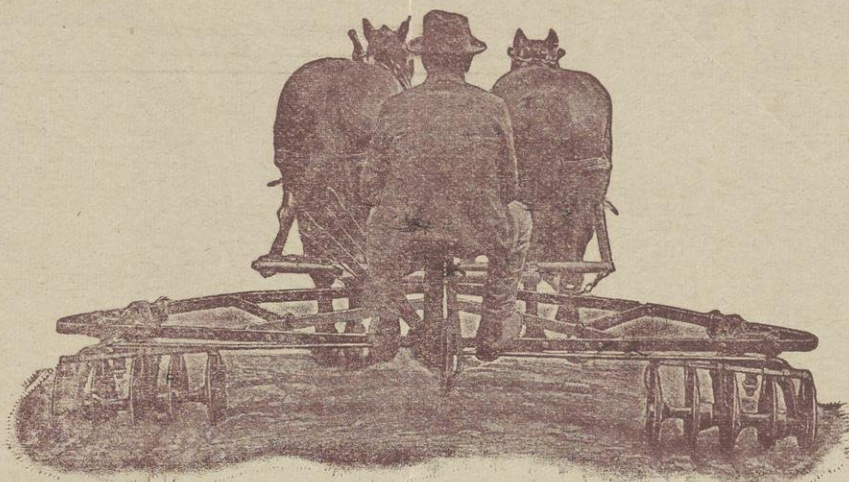
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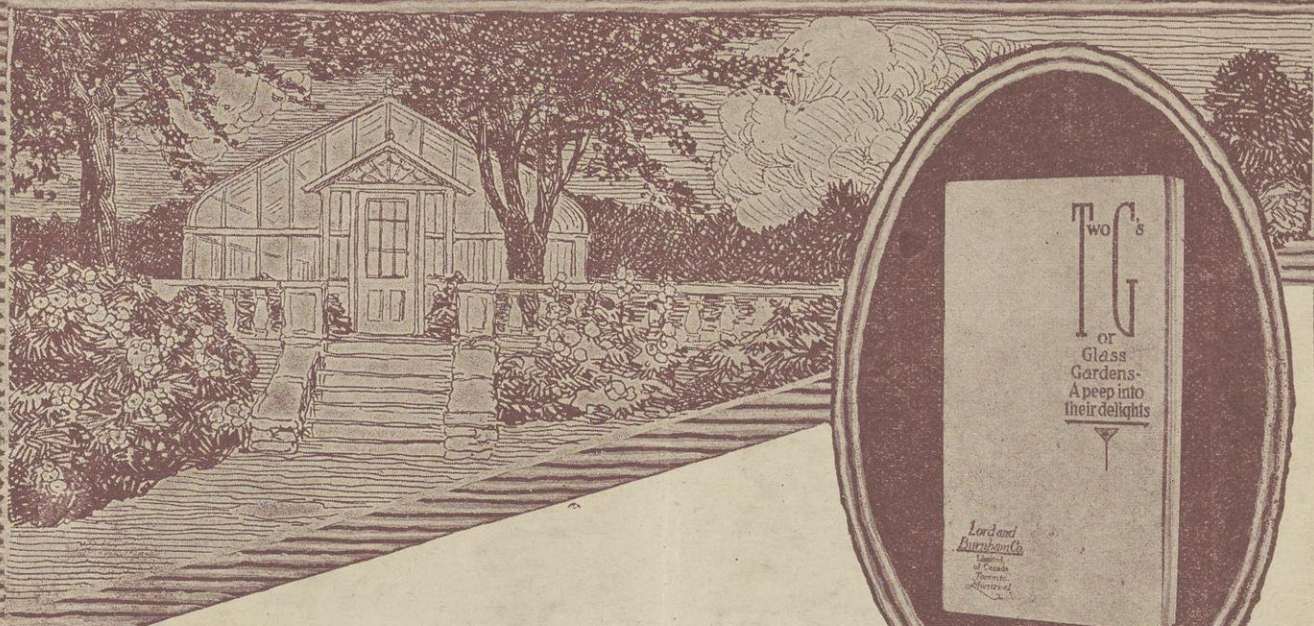
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