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Vol. 29, No. 4, April, 1921  
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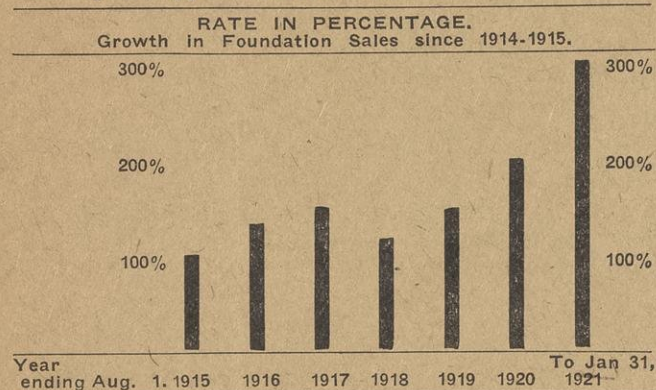
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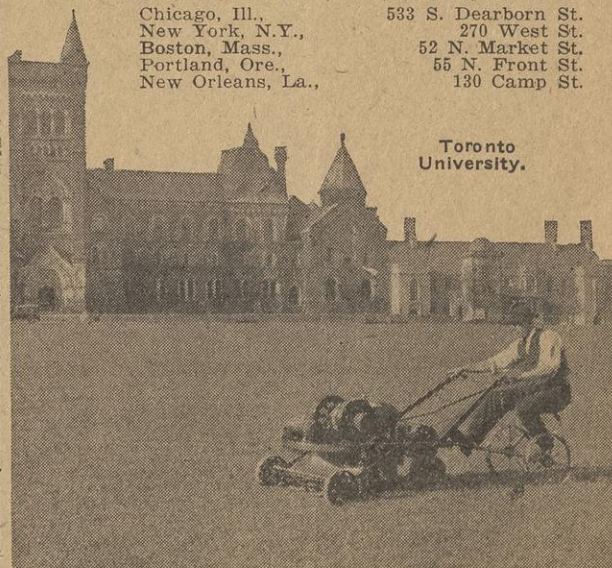
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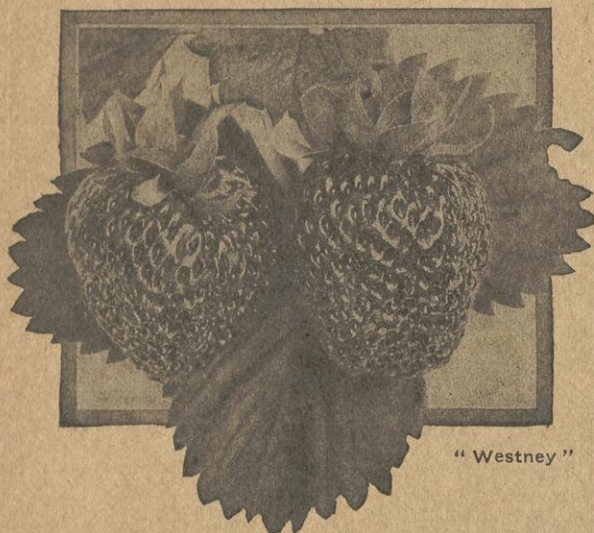
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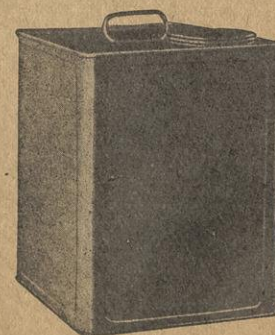
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# The Canadian Horticulturist and Beekeeper

Vol. 30

TORONTO, APRIL, 1921

No. 4

## The Drone\*

C. P. Dadant, Hamilton, Ill.

I HAVE not selected this subject for the purpose of neither praising or condemning the drone, but only to give the facts concerning this member of the bee family and to determine from them, our attitude towards him.

Drones are the largest inhabitants of the bee-hive. The cells in which they hatch number about 18 to the square inch, or 36 when we figure both sides of the comb. The cells in which the workers are reared number a trifle over 27 in the same area, or 55 for the two sides of the comb. This, for a square foot of comb, gives us 5,184 drone cells, or, for a square foot of worker comb 7,920 worker cells. These are approximate figures, but we can safely estimate that the space of comb that will accommodate five drones will be about sufficient for eight workers. We should keep these figures in mind, for they have great importance in the management of the apiary.

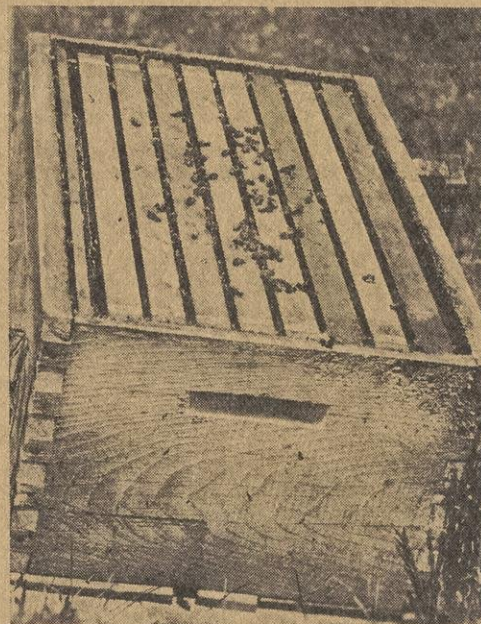
### Drone Stronger Than Worker.

The drone is far stronger than the worker. His wings are larger, so that he makes a much greater hum in flight. His eyes are more numerous, the compound eyes almost joining together at the top of his head and containing, according to Cheshire, over 12,000 facets each, while the eyes of the worker number but little over half as many. He is more vigorous in every way. If we try to kill bees with brimstone, which happened to me two or three times, to get rid of vicious Cyprians, we find that an amount of sulphur smoke or gas, which will kill the workers of the hive, may leave the drones alive.

Cheshire, who investigated and described the drone's organs, explains that the greater power of flight and vision of the drone, is necessary for the purpose of mating.

It is well known that the mating of the queen with a drone takes place in the air, on the wing. It is, therefore, important that the drone be well sup-

plied with organs of sight and of smell, for it is with either or both of these that his search for a mate is carried on. It is also well known that drones mate with queens of hives located as far distant as four or five miles. The probability is that the drone travels the greater part of the distance. We lately quoted the experience of a beekeeper, who, having sold his bees to be



A diseased colony.

transported a few miles away, set some empty hives on the stand which they occupied, in case any should return. Many did return, but they were all drones, thus proving that drones wander farther away from home than workers, and so learn their way home from a greater distance.

If the drone has powerful organs of action, he lacks in other things which make up the value of the worker-bee. He has no pollen baskets, no wax-producing organs. He never goes into the flowers for nectar; perhaps does not even know that his food, supplied by the workers, comes from the flowers. He goes to the field for a good time and

comes home to eat. His ideas of life and usefulness are evidently of an entirely different order from those of the worker. But he is well fitted for the purpose ascribed to him in nature.

When bees build comb in a natural way, undisturbed by man and his control, they build from one-eighth to one-tenth of their combs of drone size. Why leave so much space for drones, when it is evident that one or two would be sufficient for the purpose of fertilizing the young queens that may be reared in each colony?

If the mating were to take place close to the hive, or in the hive, it would be possible for a limited number of drones to be sufficient for the mating of all the young queens. If the mating took place within short range, it would probably be, of the queen with her own brother, for in nature there are not hundreds of harboring places for bees, such as hollow trees, within a few yards of each other. So there would be constant in-breeding of the same family, with a probable weakening of the race. With a large number of drones produced in each hive, the young queens, mating far from home, have a good chance to mate with drones of other colonies. So, in natural conditions, numerous drones are necessary.

### Why So Much Drone Comb?

How do the bees know how much drone comb to build? How do they know when to begin on these cells of larger size? A theory which was advanced by my father, Charles Dadant, has always appeared to me to at least partly explain the question, in a satisfactory manner.

When bees swarm, they usually have an active, prolific queen. In fact, they often swarm because there are not enough empty cells in the brood chamber of their hives to accommodate the queen's laying capacity. Usually she is so full of eggs that she drops them involuntarily, while with the swarm. So, when they swarm, the queen needs plenty of cells in which to lay her eggs.

\*A Paper read before the Ontario Beekeepers' Association, in convention December, 1920. Mr. Dadant is editor of the American Bee Journal.



She desires worker-cells, in which she can fertilize the eggs, as they pass out. So she makes known her desires to the workers. Their vocabulary is not extensive, but undoubtedly explicit. The workers, therefore, build worker combs. After a large proportion of the combs have been built, and they find themselves ahead of the queen, with plenty of room for her to lay, they turn their attention to the building of larger cells. These are not only used for drones, but also for the storage of honey, and are more quickly and readily built, since they contain less material than the worker combs. This explains why the outside combs often contain the drone cells, while the worker cells are in the centre.

An experiment which anyone can make will show the plausibility of the above theory. Let us suppose that we give a swarm of bees a hive half full of foundation or of already-built worker combs. The queen will find plenty of room at the start, and the workers will build more drone combs than they would have built otherwise. They are far enough ahead of the queen to think of building storage combs, and they do so. It is, therefore, bad policy to give to a swarm a portion of built combs. We must either give them just enough starters to direct their building of straight combs in the frames, or we must give them a hive entirely full of built combs or of comb foundation.

Young queens are very active and usually very prolific. So, in a swarm containing a young queen, the bees will build more worker comb, than if they have an old queen who is losing her fertility. Queenless bees build all drone combs. There is no queen there, and perhaps no prospect of any.

#### Foundation Not a Guarantee.

Comb foundation is not absolute guarantee of worker combs being built. Mr. Diemer, of Liberty, Missouri, who is an old, experienced beekeeper, showed me two combs, built on foundation, which had worker cells on one side and drone cells on the other. The bees had evidently delayed the finishing of the outside face of the outside combs, in the hive. When the time came to finish them, not needing worker cells, they had disregarded the rudiments of worker cells on the base and had built the drone cells upon them. Thus the base of those cells did not have the regular three losanges which are found in the base of each cell in an ordinary comb. Instances of this kind are freaks, and not to be expected usually. So it may be said that the giving of foundation to the swarm ordinarily prevents the building of drone comb.

In the domestic keeping of bees, where a large number of colonies are

congregated in an apiary, it is entirely useless, and in fact wasteful, to permit the rearing, by each colony, of as many drones as would be raised in a natural way by colonies left to their own devices. It is comparable to the uselessness of keeping, without castrating, all the males of our domestic animals, whether stallions, bulls or boars. If we can prevent the rearing of an excess of drones, we are helping our bees to save, and therefore helping ourselves.

#### Advantage of Prevention.

There is another advantage in preventing the production of an excess of drones. It is in stopping their production in colonies of inferior value or colonies which we consider as having undesirable traits, such as a cross disposition, or too great a propensity for swarming. We do not have control of the mating of bees as we have that of our barn animals. But we can increase the possibilities of desirable matings, and in the same ratio, decrease the possibility of undesirable ones.

It is true, that the total prevention of drone production in the average hive is an impossibility. However, the production of 200 to 300 drones in a colony is a trifle, when compared to the possible production in that colony of a square foot of drone brood. We have already stated that over 5,000 drones may be reared in that space of comb. In many cases, that many drones, and in most cases at least half as many will be found left to themselves. Then the average beginner thinks of buying drone-traps to do away with them. (In dealing in bee supplies, I, at one time positively refused to deal in drone-traps, because I considered them nuisances, until I found that many beginners insist on having them, and do not think a dealer is well stocked unless he keeps drone-traps, among other useless "traps.")

Perhaps our beginner will follow the advice of some sage of great wisdom, and will cut the heads of the drone brood just before it hatches. That is to say, after permitting his bees to use up much of their activity in rearing that useless brood, he will compel them to dig it out of the cells and to throw out of the hive the entire worthless lot. Then they will burnish those cells, and probably allow the queen to again fill them with eggs, to be again destroyed when ready to hatch.

A much better way, and in fact the only way, of controlling properly the amount of drone brood in a hive, is to remove the drone comb at the beginning of the season and replace it with worker comb. I insist, that it must be replaced with worker comb by the beekeeper. The same reason, which caused the bees to build drone comb,

there, would induce them to rebuild it.

Some people advance the assertion that drones are necessary in the economy of the beehive for other purposes than the fertilization of the queen. They claim that drones keep the brood warm. This would be an argument, if the drones did not have to be reared, and kept warm first, at a time when young bees might have been reared in their places, and if the bees retained them when the weather takes a change for the worse. Just as sure, however, as a storm or change in the temperature comes, which stops the crop and yield of nectar, the bees begin to kill off the drones. Nor do they let up on these massacres until fair weather comes again.

In Europe, where beekeepers still use many straw skeps, it has proved difficult to convince them of the necessity of the control of drone production. Many times, while travelling there, I met beekeepers who said that, in some way, the drones made the colony thrifty, for they always had their best crops from the colonies that reared the largest number of drones. They took the effect for the cause. It is as unreasonable to ascribe the success of a colony to the presence of many drones as it would be foolish to ascribe the success of a millionaire to the fact that he wore expensive clothes. The drones are a result of the thrift of a colony, not the cause of it.

#### Drone Control a Hobby.

This subject of drones and drones' control is one of my hobbies. It has been discussed many times in beekeepers' meetings, but I do not believe that the average beekeeper pays enough attention to it. I believe that if a comb of drone brood is allowed to be reared and matured, and the drones from it permitted to live till the end of the harvest, they will cost the apiarist as much, in crop, as that comb would contain of honey. That is to say, I believe that when we exchange a square foot of drone comb for worker comb, we increase our share of the honey by a square foot of comb honey, not only one year, but every year of the life of that comb.

Some people believe that the bee was intended to feed man. I do not believe that everything in nature is intended only for man, for it is too much vanity to believe that the entire universe was built just for us. We inhabit one of the innumerable planets revolving around one of the innumerable suns, neither the largest nor the smallest, and we are only an incidence in the universe. I do not believe that the honey which the bees harvest was intended for us any more than potato vines were intended for potato bugs.



# Beekeeping in California

Morris Spencer, Sawtelle, Cal.

**"D**OES beekeeping pay?" is a question often asked and not often answered. Can it be made to pay alone or in connection with poultry? I can say "yes," after 25 years' experience in handling over 2,000 colonies of bees in 20 apiaries at one time.

During the last few years any beginner could make bees pay, with honey at 18c to 20c per lb. My experience after careful record has been that the average crop here will run close to 70 lbs. per hive. At 20c per lb. the return would be \$14.00. Again, the wax runs two lbs. per hive, which at the present price of 40c means 80c additional. The increase can be easily figured at one-fourth of the original colonies. This, with bees selling at \$10.00 per colony, means \$2.50 for increase. This all figures up to \$7.30 per hive. One-half can be figured as profit outside of all labor if you do your own work.

The prices of honey and bees have more than doubled in the last 25 years. I have bought bees at \$2.50 per hive, that sell for \$10 now. I have seen carloads of honey sell at two and a half to three cents per lb. that sell now for 18c and 20c. Honey sold here for years for less than it cost to produce. The same applies to bees, which sold at half the price per hive that they cost to produce. Most people would say, "Oh, your swarms are clear profit." Just let them try it for a few years, and then see what they think.

It is surprising the number of places scattered around where women, elderly men and boys, or even cripples, could make a good living from keeping a few colonies. Many a boy and quite a few girls in this section have paid their way through school with a few colonies. Of course, with prices of tools, fixtures and supplies as they are, I would advise one to go slowly for a year or so in making a start. Build up your apiary. One can start with second-

grade lumber in hives for a year or so, and then replace with new.

At present-day prices, a two-storey hive will cost about \$10.00 and \$5.00 per hive for the fixtures. In other words, an apiary of 100 colonies with fixtures will cost close to \$1,500.00 in California. With a little judgment in using cheaper lumber and fixtures one can cut these costs about one-third.

The tools needed in an apiary of 100 colonies here will be about as follows: Location has, of course, much to do with it. In Southern California little protection is needed, while in Iowa State a good cellar is required. The first requisite is a good bee book, costing about \$1.00; then a smoker (the Bingham being best); a hive tool (an old file flattened at one end will do); a veil—one free from the hat and dyed green is best for the eyes; a cheap pair of gloves, cut off at the ends of the fingers. Subscribe for several of the best bee journals. These will be more than half of your success.

## Bee Diseases.

Our bees are often badly diseased with foul and black brood. These diseases, however, have no terror for the beekeeper who attends to his bees. The first one, being worse, is spread by bees robbing each other. The first-class apiarist can easily smell it when he goes into a yard. One need only turn the diseased colonies over to the inspector, and he will generally burn hive and all. There is an inspector in practically every county.

The best method of keeping clear of foul brood is to see that your bees do not go robbing. The germ is carried in the honey. Care must be taken when feeding honey to see that it is not diseased. Boiling it will kill the germ and make it perfectly safe. Again, one must see that no disease is carried on tools. One can tell it by little holes in brood cappings. If one sticks a toothpick into a cell it will stick like glue and "string" out.

The best cure that I have found is the starvation method. Shake the bees in front of a clean, empty hive in the evening. When they are all in, let them starve for about three days, keeping the hive in shade. At the close of the third day give them honey or syrup. Then give them foundation starters to draw out, if there is a flow on when treated. This is a sure cure. The old combs and honey can then be melted. Burn the old frames. The hive bodies can be stacked, and charred

by burning rags soaked in coal oil, which will make them safe.

## Hunting Bee Trees.

If a woman wants to start in bees, she can go into the mountains and hunt bee trees. She can do well, especially by hiring a boy to assist. Furthermore, she will have a healthy recreation. Bee tree hunting can almost be classed as a sport when one goes at it in the right way. A small box containing a little honey syrup is placed in an open space in the timber. Await a call from some bee. As soon as he goes home with his load, most of the worker bees come back with him. Soon a good line is started. The box is now covered and carried about a quarter of a mile in the direction the bees are flying, if in open, level country. The box is opened, and if the line of bees continues straight ahead, move on farther. A cross line is now secured by moving to one side, so as to get a line at right angles. Soon one can walk right to the tree. The boy can climb the tree and cut out the honey.

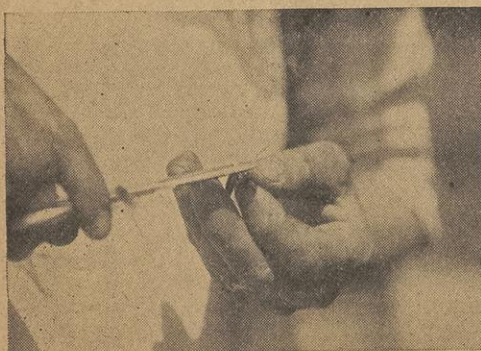
## Artificial Increase.

Where no bee trees exist, one must buy the hives or feed for increase. I have found that this is a good method. If started early enough in the season, as in Southern California, one can easily feed ten colonies into 100 by the close of the season. By putting feeders on the rear of the hives, you can force the queen to lay. Soon you will get them strong enough to readily muster a frame of brood every week. These one can soon get up to the full colonies.

## Colony Arrangement.

In locating an apiary, be sure to get a place on which the sun shines the first thing in the morning, and which is protected from wind. One wants water handy. The main thing is to see that the apiary is below the pasturage, so that all the honey can be carried down hill. How often have I seen an apiary perched on top of a hill, where the wind struck it steadily, making the bees cross. By moving it down into a hollow, they soon began to pick up.

(To be continued in next issue)



Clipping the Queen.

When honey is to be substituted for common sugar in cooking, it is accurate enough to consider that the water in a cupful of honey is one-fourth of a cupful. This fact if kept in mind makes special honey recipes unnecessary, and enables the cook with very slight calculation to modify ordinary ones, so that honey can be used in place of sugar.



## Balkan Bees

THE Balkan bee, veteran of the world war, perhaps the only living thing that was able repeatedly to penetrate the ring of steel with which the German armies encircled Serbia, is to be introduced in Minnesota.

Knight errant of a stricken people in the mountain fastnesses of Serbia, besieged by overwhelming forces for more than three years while civilization was pounded in the mortar and pestle of Mars, the Balkan bee probably holds the world's record for long distance flights.

### Honey Saves Lives.

While the Serbian people were deprived of milk, meat, bread and practically all the necessities of life during the war, the Balkan bee swarmed in millions throughout the Kaiser's ring of steel, took honey from flowers far inside the German lines and returned to the Serbian army to store it, where later it was used as food for wounded soldiers, stricken with scurvy because of a limited food supply. Its honey was one of the few delicacies of the Serbian hospital camps.

Rev. Father Francis Jager, professor of bee culture at University of Minnesota farm, who served with an American Red Cross unit in the Balkans during the world war, has introduced into Minnesota the first colony of Balkan or Carniolan bees. More productive than the Italian bee, hardier, more easily handled and ranging in a radius of eight and a half miles, according to its war record, the Balkan bee is in every way superior to the Italian bee, Prof. Jager believes.

### Penetrate German Lines.

"I first came in contact with the Balkan bee while stationed with an American Red Cross unit at Kramljani," said Prof. Jager to-day. "I had some leisure time and I began to think of bees. I heard of an apiarist in Monastir, ten miles away. At that time the city was surrounded on three sides by the German and Bulgarian armies, but we managed to get across to it and I met my man.

"Shells had partly destroyed his apiary and his bees were in about 50 large trunks. The bees were black and grey in color, in contrast with the yellow of the Italian bee in this country. I noticed the trunks were filled with tier after tier of honey in a country utterly devastated by war, where no rain had fallen in months and no green thing was in sight. Grass was so dry a spark would have kindled it.

"Where do they get the honey?" I asked my host.

### Fly Eight Miles.

"I don't know," he said. "It must be somewhere in the mountains beyond the German lines yonder."

"I took four of the trunks back to camp with me to study the bees. On the 2nd of July I placed them in some American hives I had with me. When I left in October I had 500 pounds of honey to give to soldiers in neighboring camps. My study proved the bees went a distance of eight miles to the mountains through the German lines to get their honey. In America the working radius of a bee is a mile and a half.

"Since coming home I imported eight colonies of Balkan bees from the country around Fiume. I believe they are comers for the North-West and will replace Italian bees.

### Child Can Handle Them.

"They are so gentle a child can handle them, and a queen will lay 4,000 eggs a day, four times her own weight, requiring her to eat seven times her own weight during the laying period. Feats of strength they perform in their native hills show they are exceptionally hardy, for they fly eight miles, frequently through mountain storms and blizzards. They also are very industrious.

"Their one fault is that they swarm too often, but I think this is due to the American hive, which is so small, and the bees so prolific, that they crowd them rapidly. I shall try them with larger hives under different plans of management to overcome this fault."

Father Jager is one of the foremost authorities on bee culture and horticulture in the world.

(The above is a clipping from "The Minneapolis Daily News" sent us by one of our subscribers, Mr. J. Haberer, of Zurich, Ont.—Ed.)

## Are Your Bees Starving?

Prof. F. E. Millen, O.A.C., Guelph, Ont.

THE past winter has been a mild one from the beekeepers' standpoint and bees which have been wintered outdoors have moved around in the hive much more than is the case when the winter is more severe. This means that the bees have consumed more food than in a colder winter.

Where the bees have been even partially sheltered, brood-rearing has started at a much earlier date than usual, and this means that the food in the hive disappears at a much more

rapid rate than when no brood-rearing is taking place.

To date, the winter loss from bees wintered outside should be small. From now on many colonies are liable to starve, because they have consumed more than the average amount of honey with which to rear brood. Beekeepers are urged to make an examination of every colony the first day on which bees are flying and to feed it, unless they have at least three frames with considerable honey.

It is not necessary to take out the frames, but to look at the back and top of the frames. If a fair amount of honey cannot be seen, then the colony should be fed. The feed can be mixed up in the proportions of one of sugar to two of water. Be certain that the sugar is thoroughly dissolved and then feed in an inverted Mason fruit jar covered with two thicknesses of cheese cloth or five or ten pound perforated-covered honey pails. Place feeder directly over frames. The syrup can be fed by placing an empty super over the brood chamber and then turning back one of the rear corners of the quilt, so that the bees can suck the syrup from the container.

Beekeepers should remember that from now on, in almost all cases, it is the strongest colonies which starve. A very small amount of food will last a weak colony for several weeks, whereas a strong colony requires a much larger amount of honey. Beekeepers are urged to accept this warning and make an early examination of every colony, and so avoid the terrific winter loss which occurred last year.

## May Hints for Beginners

Wm. A. Weir, Toronto, Ont.

MAY begins the active, open season with the bees. This is the last call to get all supplies ready for the work. Have at least three supers of comb or two supers of foundation (full sheets) in frames ready for instant use.

Locate the apiary in a well-sheltered, well drained spot and give lots of room between the hives for manipulation. Six feet between the hives is little enough, especially if you should be called upon to do any treating for disease.

### Look Out for Robbing.

Look out for robbing! Generally speaking the first thorough overhauling of the hive should be left until the opening of dandelion and fruit bloom. Robbing is only developed during a honey dearth. Keep entrances to colonies contracted; close dead colony entrances; expose no combs or honey, and wait till you see plenty of fielding



bees returning with loads of pollen before attempting to make an examination of the colony broodnest.

Clip your queens in dandelion bloom. They will be easier to find than later on, and you will provide control measures over possible swarms.

#### Inspect for Disease.

Be your own inspector for disease. May is the time to detect the presence of American or European Foul Brood in the hive. Do not put supers on a colony until you are sure they are free from American Foul Brood. Examine every cell of brood. Healthy brood from the time the egg hatches until shortly before it emerges is pearly-white in color and distinct in formation. If any brood does not answer to this description, be sure, and KNOW what is the matter before giving the colony a clean bill of health.

"It is not the number of colonies that count but the number of bees in the colony," is good advice from Prof. F. E. Millen, of Guelph, Ont. Big colonies give big crops when handled right. Plan to assist weak colonies by adding young, worker bees, or putting over strong colonies. Plan to give strong colonies plenty of room for developing the largest possible brood-nest, and last, but not least, place one average hive on scales and watch the honey flow.

### THE EDITOR'S DESK

#### Net Weight Containers

THERE have been several enquiries received from beekeepers regarding the necessity of the net weight appearing on all honey containers. Reports have also reached us that individual beekeepers have been restrained from selling honey until their present containers were properly marked. We have been in touch with one of our local honey pail manufacturers regarding this point and correspondence has been carried on with the Department of Health, Ottawa, Ont., which has the administration of the Food and Drug Act.

The last word in this correspondence is as follows:—"Replying to your letter of the 11th inst., in connection with honey pails, I may say that, as the pails you showed me in this office, designed to contain honey are not considered by us as SEALED containers, the law in regard to statement of net weight on them does not apply."

(Signed) J. A. AMYOT,

Deputy Minister, Dept. of Health.

It will thus be seen that the honey containers do not come under the Act

at all, and we are perfectly free to use the present style of container without declaring the net weight of contents until Parliament may see fit to put through an Act pertaining to these particular containers.

### DOINGS IN BEEDOM

The A. I. Root Company of Medina, Ohio, have formally announced the opening of a Canadian Foundation plant at Ingersoll, Ontario. It is expected the plant will be equipped to turn out other supplies for spring, 1922.

#### British Columbia.

"Bees at this apiary had a good cleansing flight on the 8th of February. No dysentery of any account. On the 16th, colonies brought in pollen freely. On the 21st, I opened four hives and all had large patches of sealed brood.

"This apiary is located in the Fraser Valley. Mountains are on the north-east and northwest side. Every colony is packed in individual cases and stays packed summer and winter. This apiary was started during the summer of 1917 and has paid well."—G. Guyer, Guyer and Brooks, Port Hammond, B. C.

#### Manitoba.

"Almost every beeman in Manitoba has suffered a heavy loss this winter. I think likely it is on account of the quality of the honey we got last year. We should have fed more syrup in the fall. I hear sad reports from all over the Province."—W. J. Long, Winnipeg, Man.

#### Ontario.

"Fresh seeded fields look tough here. I am reseeding mine. Nearly all farmers are sowing the white sweet clover for pasture.

"Bees have wintered well. I put 80 colonies in the cellar and set out 80, all well except a few weak ones. A neighbor reports his wintered well. He usually has from 150 to 200 colonies in Jumbo hives, some in the single case (Krouse style) and some in quadruple cases."—J. A. Rudolph, Mitchell, Ont.

"This is great weather, 76 degrees Fahr. yesterday (April 5th). Last night the bees roared in their hives like they do in summer. Soft maple is furnishing plenty of pollen. The winter loss is not entirely eliminated in spite of mild winter. Cellar and outside packed bees are about alike. The cellar temperature was rather high, causing some dysentery, and too much winter breeding. The biggest loss is from failing queens, especially drone layers.

"Clover starts well, but we may get any kind of weather yet. A few days would bring out early plum blossoms."—J. Haberer, Zurich, Ont.

## Questions Answered

#### Painting Hives.

What is considered the best color to paint hives?

Ans.—It is generally accepted that white is the best color for single-walled hives. It is sometimes advocated that the hives should be painted a variety of colors in order that the bees belonging to the hive may more readily locate their hive. I am not convinced that the extra trouble involved is worth while.

#### Replacing Queen in Brood Chamber.

After supering with extracting (deep) combs and allowing queen to use super as additional brood nest, how would you replace queen in original brood chamber? Would you have to find her and place her below?

We always go to the trouble of finding her and putting her below.

#### Brood Rearing Now.

I have eight colonies in four hive tenement cases at time of writing (March 8th). They have quite a lot of eggs and capped brood. Is it a good thing to have brood rearing at this time of the year?

This year brood rearing commenced early. Provided the colonies were well fed last fall and have sufficient pollen and bees to keep the brood chamber conditions right, there will be no trouble. It is quite normal in Southern Ontario to find more or less brood rearing going on in the colony which is packed outside, at the beginning of March.

#### Value of Colony.

About what would a strong colony of black bees in ten frame Langstroth hive be worth?—A. B., Lambton County, Ont.

The answer to this question will depend entirely on,—1. Whether the colony is free from disease. 2. Whether the combs are good combs. 3. Whether the queen is young or old and, 4. Whether the hive itself is in a good condition of repair, painted, accurately made, etc. Dealers are offering full colonies with all these conditions, 100 per cent free from disease, at about \$25 to \$30 each for Italian stock. They guarantee delivery but the customer pays the express charges. You may use this as a gauge for valuing the black colonies you mention.

Keep ahead of the bees. Prepare now.

"European foul brood attacks the colony in the early spring or late in the season. This is an important fact in devising methods of control."—Dr. E. F. Phillips at the 40th Annual Convention of the Ontario Beekeepers' Association.



## The Canadian Horticulturist

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Peterboro, Ontario.

## Marketing Fruit in Great Britain

A SPECIAL committee of the Ontario Legislature, under the chairmanship of Mr. W. J. Bragg, of Bowmanville, is conducting inquiries, with the object of finding the causes for the great spread between the price paid Ontario fruit growers for their fruit and the prices paid by British consumers for this fruit. The report brought back from England by Hon. Manning Doherty, Provincial Minister of Agriculture, that fruit marketing in Great Britain is controlled by a small group of dealers who manipulate prices without regard to market conditions, and who succeed in exacting exorbitant prices for fruit which often has cost them but little, has revived interest in this subject. The existence of this pool has been known for many years, and numerous remedies have been suggested during the past twenty years. So far no effective remedy has been found. If Mr. Bragg's committee can solve the problem they will confer a great service on Canadian fruit growers.

One of the remedies which has been suggested is that the Ontario or the Dominion Government should open up a sales agency in Great Britain, to which fruit could be consigned and sold by public auction. Such a venture would belong more properly to the activities of the Dominion Government, which is especially charged with matters of trade and commerce. A difficulty in the way of carrying out the proposed plan is the securing of sufficient quantities of produce to supply the demand throughout the year. Most of the large buyers in England prefer to deal with firms which they know can supply their needs at all times as these arise. Sales of Ontario fruit, were they to be attempted by the province, would not be a large enough factor in the British market, where fruit is handled from all parts of the world, to draw the support that would be necessary to guarantee their success. It would seem that if anything of this kind should be attempted the Dominion

Government might well confer with the Governments of New Zealand, Australia and South Africa, with a view to a joint enterprise being undertaken by all four countries. Such a union of forces would greatly increase the volume of fruit to be sold, would tend to provide a more uniform supply throughout the year, would attract wider attention in Great Britain—where any measure having Government support carries greatly increased prestige—and would tend to divide the expense. It is not likely that any one province like Ontario could compete successfully against the strongly entrenched ring among the leaders in the British markets. A union of forces, such as suggested, should be able to succeed.

## Grading Fruit

THE past few months has been marked by a great and rapid decline in the value of farm products of all kinds. Countries which disappeared during the great war as factors in the export markets of the world are once again beginning to market large quantities of surplus products. This has been particularly noticeable, of late, in connection with dairy products. Recently butter has been offered for sale in Toronto from New Zealand, Denmark, Holland, the United States and the Argentine Republic. Fruit growers cannot hope to escape this change in conditions, and should prepare to meet it.

Only a short investigation of market conditions is required to show that those countries which are making the greatest headway are those in which the grading of farm products has made the most headway. When buyers know that they are safe in ordering by grade they often find it possible to buy and sell in large quantities without even seeing the goods they handle. This is something they do not dare to attempt in the case of farm products, the grades of which have not been commercially established. This condition applies not only to foreign markets, but to home markets as well. The establishment of grades for fruit and the marketing of fruit according to these grades is something which needs to be carried much farther in Canada than it has been as yet. The sooner the problem is dealt with and solved the better will it be for Canadian fruit growers.

Those fruit growers who produce a large percentage of high-class fruit should receive better returns proportionately for their products this year, as compared with the prices received for fruit of poorer quality, than has been the case for some years past. The great decline which has taken place in the prices of all classes of farm products has led to the usual difficulty being experienced in disposing of the poorer grades of products, even at prices considerably under those realized by the higher grades. Unless there is an unexpected shortage of fruit this year, it seems likely that the fruit market will be affected, in sympathy with the conditions affecting other farm crops, and, therefore, that a greater difference will exist than usual between the quotations for the better and poorer grades of fruit.

An authority on farmers' cooperative enterprises has strongly advised against the employment in executive positions of men who are fluent speakers on cooperative principles. Executive and business ability are not, as a rule, associated with loquaciousness. It is interesting to note in this connection that most of the business leaders in farmers' cooperative enterprises in Canada

are not fluent public speakers. We refer to such men as Hon. T. A. Crerar, J. R. Murray and C. Rice-Jones, of the United Grain Growers, Ltd.; F. Riddell, of the Saskatchewan Cooperative Elevator Co., Ltd.; W. A. Wilson, of the Saskatchewan Cooperative Creameries, Ltd.; A. Trudel, of the Quebec Cooperative Central Society; Mr. Hughes, of the Farmers' Dairy Co., Toronto; and others who might be mentioned. Undoubtedly there are exceptions, but the point is one which may well provoke thought.

Had there been a large cooperative organization representing any considerable percentage of the fruit growers of the Niagara Peninsula last year, the unfortunate situation which developed in the Peninsula owing to the shortage of packages might have been avoided. Manufacturers of fruit baskets, boxes and barrels find it possible to make substantial reductions in their cost of manufacture when they have an approximate idea some months in advance of what their output will be. They are able to purchase their supplies of timber to much better advantage, to employ their help more regularly, to avoid waste in the processes of manufacture, and to reduce selling costs. It is possible for them to pass practically all of these savings on to the purchasers when goods are purchased in large orders. In few lines will it be possible for the recently-organized cooperative company in the Niagara Peninsula to effect greater savings than in the purchase of packages.

## Cooperative Success

THE application of cooperative principles to the handling and marketing of fruits divides itself naturally into two distinct fields. One is the sale of fruit in wholesale quantities for export, or to distributors in towns and cities. This is a sphere of activity in which producers may expect to achieve the greatest measure of success. The second field relates to the retailing of the fruit. This is a sphere of activity which is related more closely to consumers' cooperative organizations.

Within the past year an editor of the Grain Growers' Guide has made a careful first-hand study of cooperative enterprises in the Pacific Coast states. The great apple, orange and raisin growers cooperative enterprises were among those investigated. The results of this investigation have been published in a series of articles in the Grain Growers' Guide.

Speaking broadly, the cooperative organizations which have been attended by the greatest success are those which have confined their activities to the marketing of some one main crop, and this only in wholesale quantities. When several different crops are marketed, difficulties multiply rapidly, and the chances for success decrease in proportion. When some one crop like raisins, apples or oranges is specialized in, there is an identity of interest among all the growers concerned, and a knowledge by the rank and file of the members of the organization of the special conditions relating to the crop, which has an important influence in promoting the success of the company. Where several crops are handled this identity of interest and general knowledge among the growers of the special problems involved is somewhat lost. Thus it would seem to be wise for cooperative organizations at the outset not to attempt too many lines of activity. The success achieved by the grape growers of the Niagara Peninsula in the marketing of their crop last season would tend to support this contention.



## Niagara District Notes

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

THE new Co-operative Company, The Niagara Peninsula Growers, Limited, has been successful in obtaining a larger number of members than was expected. Nearly all the larger growers, as well as a large number of the smaller growers, from Burlington to the Niagara river, have joined. Dr. Creelman will soon assume the general managership. Although an attempt was made to stir up some dissatisfaction amongst the members on his appointment, it met with complete failure. The fruit growers are quite willing to give him a fair trial in this onerous position, and fully expect that he will make good. In the meantime, J. B. Fairbairn, of Beamsville, is acting manager.

Drysdale Carpenter, of Winona, has been appointed sales manager, and his brother, Eldon Carpenter, assistant sales manager. Two more capable and experienced salesmen could scarcely have been found in the district. They have been connected for

years with the well-known firm of C. P. Carpenter and Sons, who built up a large and successful business in Ontario, Quebec, and the Maritime Provinces.

The Act to incorporate the Niagara Peninsular Growers Limited, came before the Private Bills Committee of the Dominion House on April 8th, last, and was reported favorably. Owing to certain unusual features under which the growers desire to operate, it was necessary to seek special legislation, as the ordinary provisions of company law were not sufficient. The company is incorporated with a capital of \$1,500,000. The shares are restricted to fruit growers, with a maximum individual holding of 5 shares. The directors are to be elected from every section of the Niagara Peninsula, so that each district will have a voice in the management of the company.

The provisional directors are: H. T. Foster, Burlington; J. P. Bridgman, Winona; D. Hunter, Grimsby; J. B. Fairbairn, Beamsville; A. W. Smith, Vineland; A. A. Cruise, Port Dalhousie, and G. C. Brown, Fonthill.

Grimsby has been selected as headquarters, offices of the company being located in the Village Inn Annex. A private telephone line extending from Niagara-on-the-Lake to Clarkson, will be erected immediately by the Bell Telephone Co., and special telegraph facilities will also be arranged. The company expects to start shipping about May 1.

### Damage By Frosts.

Considerable damage was caused the fruit growers by the sharp frosts of April 10 and 11. Some damage has been caused to cherries and early plums, but the general opinion is that other fruits have not been affected to any extent. Shortly after the frosts, officials of Vineland Experiment Station examined the orchards and reported that, as far as they could determine, the peach and apricot buds had withstood the cold.

A report from Beamsville says that only a small percentage of the plum and cherry buds were affected, but further East, the growers were extremely nervous about results. A report from St. Catharines on April 11, says that leading growers were of opinion that no harm had been done peaches, but early plums and cherries were affected. No damage was done to grapes or vegetables.

Growers around Burlington and Aldershot think that early plums were affected, but

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All comb foundation manufactured by the JONES-WEED Process is made from absolutely pure, sweet-smelling beeswax. It is manufactured by a method which preserves the sweet odor and yellow color and texture of the wax. All JONES-WEED Process is well made and well packed, and should reach you in good condition. We will make up wax with the same care that our stock goods are made.

We will gladly furnish a sample of any grade of our foundation for inspection.

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Untested, \$1.50 each; \$15.00 per doz.  
Sel. Untested, \$1.75 each; \$17.50 per doz.  
Tested, \$2.25 each; \$22.50 per doz.  
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Price includes American Exchange and safe delivery guaranteed.		

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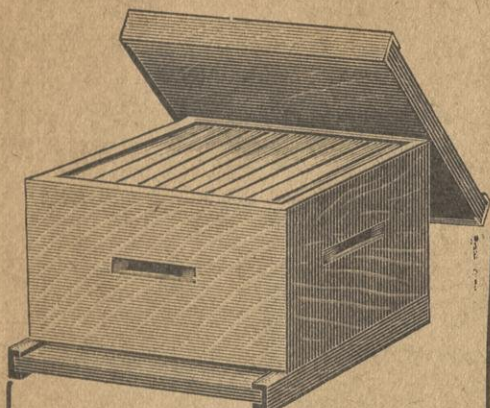
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Northern bred for business, from my best SUPERIOR BREEDERS. Gentle, roll honey in, hardy, winter well, not inclined to swarm, three-banded. Queens a specialty. Twenty-seven years' breeding experience. Satisfaction guaranteed. Safe arrival in U. S. and Canada. Unt., \$1.50; 6 for \$8.00, 12 for \$14.00. Sel. unt., \$1.75, 6 for \$9.00, 12 for \$17.00.

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A few choice colonies of Italians, at \$20.00 per colony; with choice breeding queen, \$25.00.

A few choice breeding queens at \$10.00 each; after July 1st, \$5.00 each. No untested queens for sale.

**JOHN A. McKINNON**  
ST. EUGENE - - - ONTARIO

that cherries, apples and pears escaped. The season is exceptionally early, fully three weeks ahead of last year.

For the past 10 days or more, spraying with lime-sulphur has been universal, and the orchards as a rule have been well attended to.

### Wage Rate for Pickers.

A report from Grimsby says that the new scale of wages for fruit pickers and general labor in the Niagara District during the coming summer, adopted by the majority of growers, will be as follows: Strawberries, 2½ cents; raspberries, 3½ and 4 cents, the half cent in each case being paid at the end of the season to those who stay on the job; cherries, 15 cents for 6-quarts, and 25 cents for 11-quarts; black currants, 60c per 11-quart basket. The day labor rate for women has been set at 20 cents and 22 cents per hour, according to efficiency. 25 cents and 35 cents per hour will be paid for other labor, according to fitness and ability.

### New Basket Factory.

A report from Old Niagara says that the preliminary work of setting up the machinery for the new basket factory is well under way, while car loads of basket materials are arriving daily. It is expected that the factory will begin operating in May.

### Prices for Tomatoes.

Forty cents per bushel will be the price paid for tomatoes to producers, according to the announcement made by the heads of the canning industry. Last year 50 cents was the price, but it is stated that they are already assured a full supply at 40 cents, nearly all contracts having been made.

The growers living along the highway west of Grimsby, near the Woolverton Mountain, are trying to preserve the mountain side, to make it a bird and wild flower paradise. Large signs have been placed on the property, forbidding trespassing in the woods, and no shooting will be allowed.

Wild cucumbers are a serious menace to the pickle industry of the United States. The U.S. Department of Agriculture claims that the eradication of this plant would reduce, if not entirely eliminate, the mosaic disease of cucumbers, which in some sections has practically driven the pickle business out of existence. The wild cucumber is the principal, if not the only, means by which this disease is carried over from season to season.

### MOTT'S NORTHERN-BRED ITALIAN QUEENS.

Hardy, prolific and resist disease well. Sel. unt. 1, \$1.50; 6, \$8.50; 12, \$15.00. Sel. guaranteed pure mated or replace free: 1, \$1.75; 6, \$10.00, 12, \$18.00. Sel. Tested, \$2.50 each.

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Every hardy plant worth cultivating, true to name.

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All the leading varieties at moderate prices. Special terms for large growers.

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Clean grown Irish stock, all leading varieties.

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See Advertisement on another page.

## ONTARIO BRED QUEENS THREE-BANDED ITALIAN

We will accept orders for a limited number of queens, our own production from original Doolittle stock, for delivery during month of June. Large quantity deliveries cannot be promised before July. Orders will be filled in rotation. No packages for sale.

	June prices.				July prices.			
	1	6	12	25	1	6	12	25
Untested .....	\$2.25	\$13.00	\$25.00	\$50.00	\$1.50	\$8.50	\$16.50	\$33.00
Select Untested..	2.50	14.50	29.00	58.00	1.75	10.00	19.50	39.00
Tested .....	4.00				3.00	16.50	30.00	
Sel. Tested .....	5.00				4.00	22.00	40.00	

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Your dollar is worth one hundred cents in Canada.

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SARNIA -:- -:- ONTARIO



## Fruit Market Conditions

Furnished by Dominion Fruit Branch,  
Ottawa.

Dominion fruit inspectors in the big market centres of Canada report conditions for March, exclusive to The Canadian Horticulturist, as follows:

### St. John.

The barreled apple market has shown more fluctuation in March than during the whole season. Good No. 1 apples were hard to get. Some No. 1 Spys sold as high as \$9.00 per barrel, while the lower grades, such as No. 3 Spys, brought \$4.00. No doubt the high prices in the English market with the apple crop in the hands of large companies caused scarcity and high prices. Only a few odd lots of apples are coming forward. These are in the hands of the small orchardist, and will be cleaned up in the near future. The only apples the retail trade have to depend upon are those which are imported. Some of these are showing scald, while others of more recent importation are in good condition. Prices for good clean fruit remain firm.

The farmer and dealer find the potato crop problem most difficult to solve. In all sections of the province, large quantities are held. The market here is weaker, and with the opening of navigation on the St. John river and tributaries, decidedly low prices, if not a glut in this commodity, are expected.

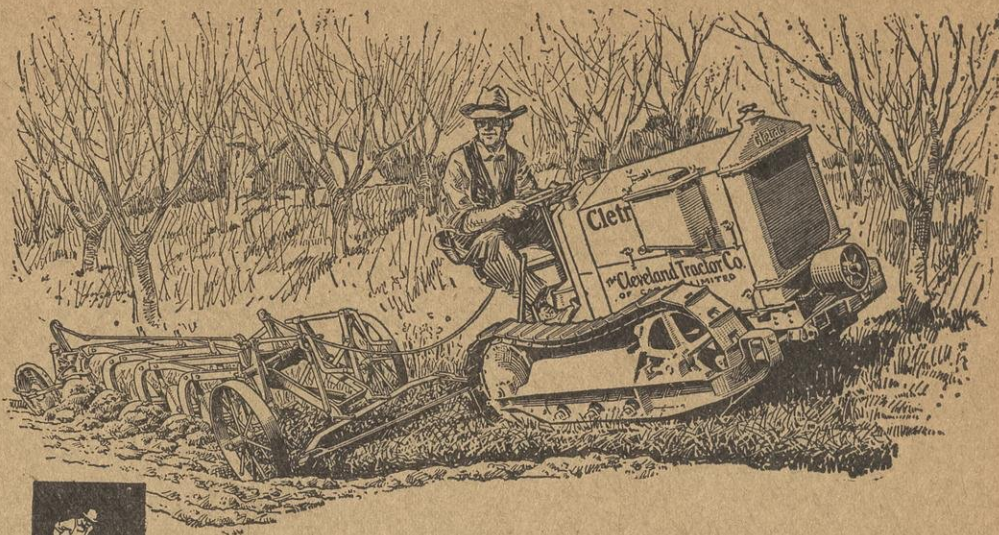
The onion market has also shown a downward tendency within the last week. Imported onions are coming in at a price that can undersell the Ontario onion. The new Bermudas will also be on the market shortly. The fruit and vegetable trade has been good throughout the month.

### Montreal.

Owing to the unusually warm weather at harvest time last fall, apples have not kept well, except where great care, to ensure a proper temperature, was exercised in storing. No. 1 and No. 2 grades have kept a great deal better than domestics, and No. 3's. Where apples of the latter grades have been held for any length of time, they have shown loss. Dealers have apparently not realized that the domestic and No. 3 are not storage grades. Northern Spys, in good condition, are in demand at good prices. No. 2 Spy sold on March 30th at \$10 per barrel.

The first car of Louisiana strawberries arrived on March 19, and was followed by two more cars, one on the 24th and the other on the 27th. The three cars contained approximately 2,160 crates of 24 pints each, and sold wholesale at 27c average.

Florida tomatoes in six basket crates are arriving in carlots, and selling at approximately \$10 per crate. California asparagus



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WAY, BUT—



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THE CLETRAC WAY.

## Like Good Spade-Work In The Orchard—

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Horsepower: 12 at draw-bar, 20 at belt-pulley.  
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Red Raspberry, Plum Farmer  
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Alpine and perennials, unique collection; many new varieties unobtainable from any other source.

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have proven their quality in the vegetable gardens and flower beds in every section of Canada.

They are proven stock—absolutely true to type—clean, healthy, vigorous—the only kind of seeds it pays to plant.

Our big new Seed Annual will help you to choose the varieties most suitable for your Vegetable and Flower Gardens.

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choice strains of Florist's Flowers are unsurpassed and we can point to over 300 exhibition Awards gained in all parts of the world.

Prices always available—spot or growing crops.

The Address

**KELWAY & SON** Wholesale Seed Growers  
LANGPORT, ENGLAND

is also in fair demand at \$12 per crate (March 30). Home-grown cabbage, well trimmed and in barrels, are selling at \$1.00 each.

The month of March opened with a plentiful supply of fair to good potatoes on hand, most of which were shipped from New Brunswick and eastern Quebec. These sold at from \$1.00 to \$1.10 per bag in carlots loose. Towards the end of the month the price dropped to 80c and 90c per bag for best varieties and condition.

### Ottawa.

During the past season 200 carloads of apples were shipped into Ottawa, a small portion of which was re-shipped to towns in the Ottawa and St. Lawrence Valleys. The remaining stocks are approximately 1,500 barrels and about the same number of boxes. The barreled stock is principally of the Ben Davis variety, with a few good Spys, the latter selling wholesale at \$10.50 for No. 1 and \$9.00 for No. 2 grade; also a few Russets, No. 1, at \$8.50 and No. 2 at \$7.50. Some odd lots of mixed varieties are now coming in from Ontario points, the bulk of which is in a poor condition, and is being bought by pedlars. A carload of Baldwins and Greenings, graded No. 3 (orchard run), received on April 4, were sold by auction the following day, the average price being \$5.95 for Greenings and \$5.60 for Baldwins. Some of these were bruised and in a wasty condition.

Louisiana strawberries are being sold in limited quantities at 35c per pint and 65c Imperial quart box. The vegetable market is very quiet, with abundant supplies on hand.

Potatoes are selling wholesale at 85c per bag. Onions are a drug on the market, and are being sold at auction from 50c to \$1.00 per hundred pounds, according to quality.

### Toronto.

Quite a large business is being done in imported fruits and vegetables. No. 1 imported Winesaps are selling at \$4.00 to \$4.50, and lower grades \$2.75 and \$3.00. Ontario boxed apples and graded stocks in barrels are about off the market. A considerable quantity of ordinary apples are being offered in open barrels, selling from \$2.50 to \$5.00. One lot of good tree-run Spys sold at \$7.00. Owing to the reduction in the price of oranges, and the heavy importations, the demand for apples has been somewhat lessened.

Potatoes are moving slowly and selling from 60c to 70c per bag f.o.b. in bulk. Onions and other domestic vegetables are selling slowly and at a low price.

Large quantities of Southern vegetables and strawberries are being offered, the latter selling at 20c to 21c wholesale per pint box.

### Winnipeg.

Large stocks of apples and vegetables of all kinds are on hand, the arrivals for the past month being 55 cars of Washington apples, 19 cars of California vegetables, including 2 cars of lettuce and 2 cars of celery, 3 cars of Texas cabbage, 4 cars Mexican tomatoes, 2 cars of Louisiana strawberries, 5 cars of Ontario apples, 2 cars of Ontario vegetables, 2 cars of Ontario cabbage, and 1 car of B. C. vegetables. The California fruit and vegetables arrived in good condition, but the Ontario apples, cabbage and other vegetables were not so good. The market is flooded with small sized Winesaps, and the dealers claim that owing to new competition, changeable weather conditions and general deflation, they are doing business at a loss.

Jobbers who stored potatoes are taking a loss of as much as 60c per bushel, as Min-



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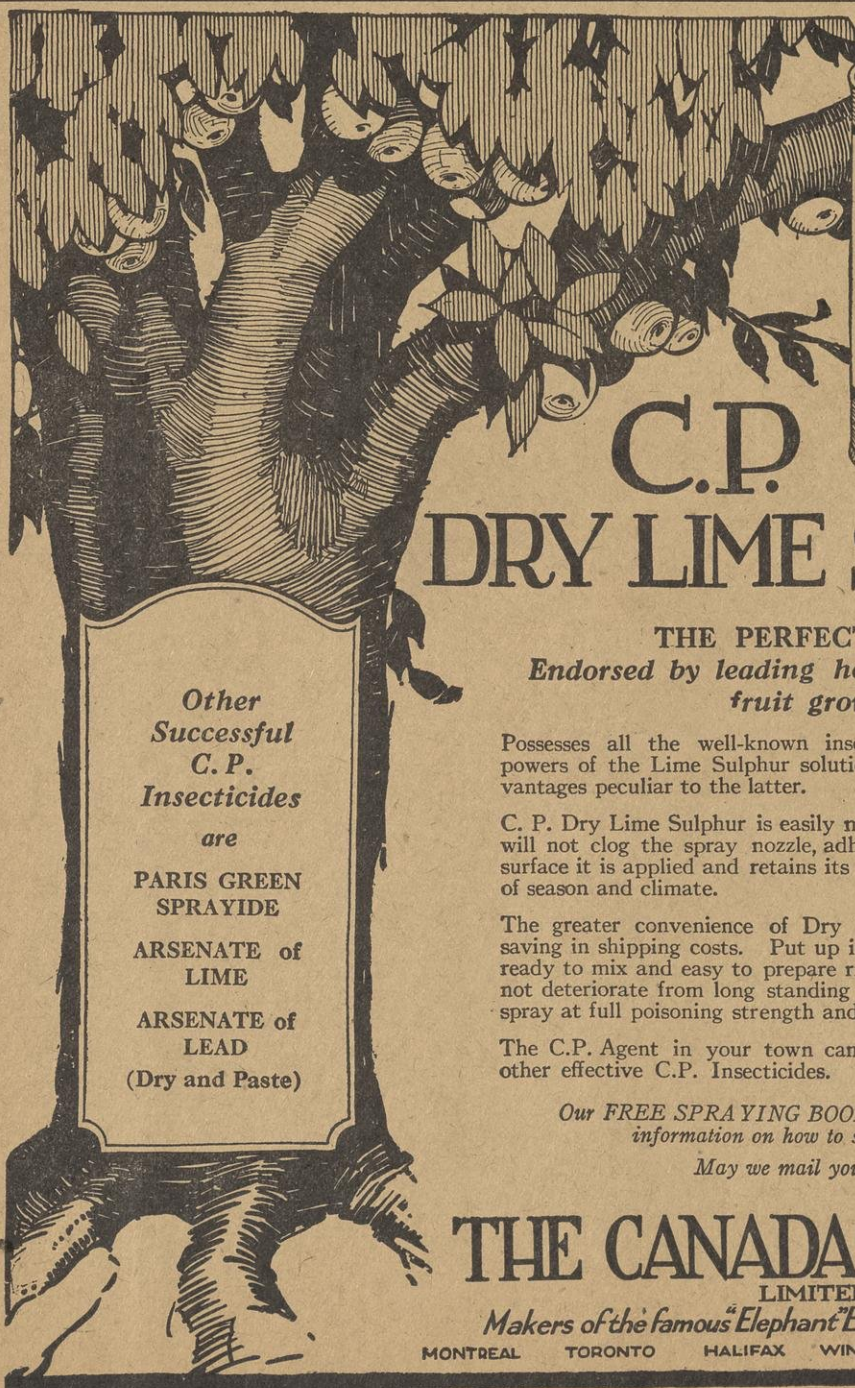
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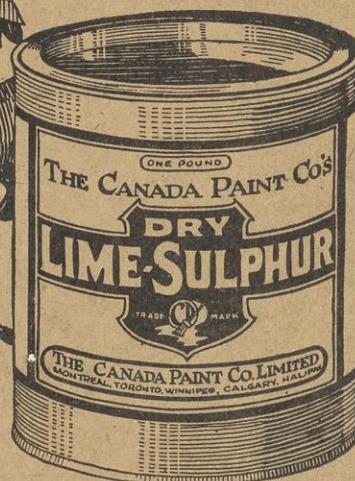
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LEAD  
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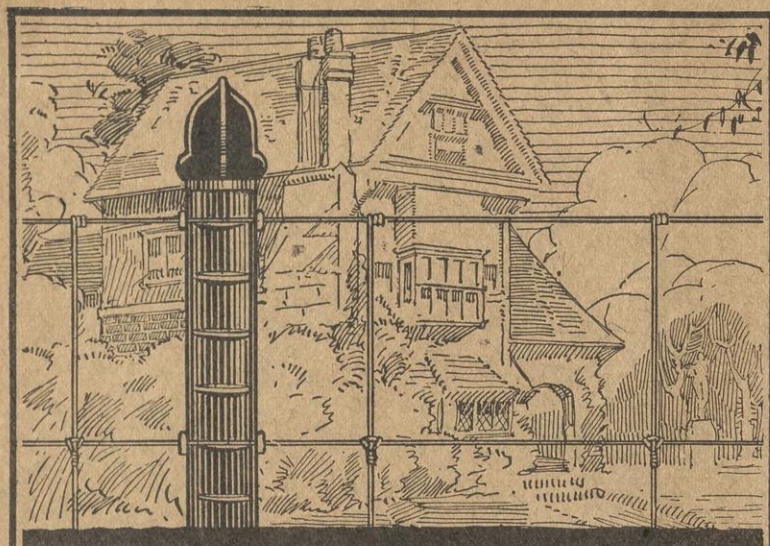
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**BRUCE'S CHOICE MIXED.** A good mixture, 10 for 50c., 25 for \$1.00, 100 for \$3.50 postpaid.

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**SEPARATE COLORS.** White, Yellow, Pink, Scarlet and Striped, 10 for 75c., 25 for \$1.50, 100 for \$5.50 postpaid.

**NAMED VARIETIES.** Each separate and distinct, 12 for \$1.12, 25 for \$2.65.

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Very handsome flowers. Plant in May, bloom in September. Easily grown and tubers good for several seasons.

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nesota spuds are now being laid down cheaper than in the fall. Alberta potatoes do not seem to be in demand, as their condition on arrival last fall was not what it should have been owing, in most cases, to field frost.

Strawberries are not cleaning up quickly, but tomatoes have found a ready sale. Jobbers claim that business has picked up some during the last few days, since the weather has moderated. It is expected April will be better, and that they will get out from under the stocks of apples now here.

### Calgary.

A few varieties of British Columbia and imported apples remain on this market. Newtown Pippins and Winesaps are selling at \$3.00 to \$3.75, according to size; Ben Davis \$3.00. Movement is slow.

British Columbia and Alberta potatoes moving slowly and selling at \$30 to \$32 per ton. Everyone is apparently well stocked. Carrots, turnips and beets are being sold at 2c per pound, movement being brisk.

California fresh vegetables have found a good market. Mexican tomatoes are in brisk demand at \$7.50 per 30-lb. lug box. The first car of Louisiana strawberries arrived April 1 in good condition, and is meeting with a fair demand at \$7.50 per 24 pint crate. Weather for March has been changeable.

## A Live Association

The Northumberland and Durham Apple Growers' Association held one of their largest annual meetings on February 28th. Officers for the coming year were elected as follows:

Officers elected for the ensuing year are: Pres., R. B. Scripture, Brighton; Vice-Pres., A. A. Colwill, Newcastle; Sec.-Treas., H. Sirett, Brighton; Directors—W. H. Gibson, Newcastle; W. J. Bragg, M.P.P., Bowmanville; C. R. Lovekin, Newcastle; W. Montgomery, M.P.P., Brighton; J. G. Wait, Colborne; A. M. Macklam, Brighton; P. C. Dempsey, Trenton; E. H. Martin, Port Hope.

Among the speakers were Prof. A. Leitch of the Farm Survey Dept., Guelph, who gave the report of the survey made in Durham last year. He pointed out that the two counties are destined to be an orchard district and that the man who invests money in a farm must first look to the orchard profit. Land valued along the front at \$100.00 an acre is too high priced for mixed farming.

Prof. H. H. Whetzel, of New York State College of Agriculture, discussed methods of fruit disease control. In New York State a system has been arranged whereby the Department of Agriculture keeps orchardists in touch with weather conditions. This

## Aster Plants

Vick's, the best on earth—White, Pink, Lavender, Crimson, Purple—\$1.50 a hundred. Try a collection, 20 of each. They are all prize-winners. Also some mixed Gladioli from a good Coll., \$3.00 per hundred.

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And everything good for garden and Lawn. None better—none cheaper.

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enables them to spray their trees just ahead of the rain period.

Prof. Ceasar, O.A.C., Guelph, assisted by D. J. Gibson, Bowmanville, answered the large number of questions put by the meeting. Addresses were also made by Dr. Farncomb, Warden Fred Bowen, W. J. Bragg, M.P.P., and W. T. R. Preston, Port Hope.

### A Good Radial Service Wanted

Fruit growers and shippers of the Niagara District in giving evidence before the Sunderland Commission recently, emphasized the necessity of a more adequate freight service if the industry was to develop and expand properly. Mr. J. A. Wills, of Jordan, stated that enough fruit was lost last year in his district to have built the proposed radial line. A radial service to St. Catharines would also assist in solving the help problem.

W. P. Bunting, of St. Catharines, former president of the Niagara Peninsula Fruit Growers' Association, stated that the district wanted an efficient, rapid, convenient and safe service, with proper hours for moving the goods. Under the present steam railway service, the Toronto market becomes very much demoralized at times, because shipments of fruit come in at all hours of the day. "If" he said, "shipments to the Toronto market could be delivered entirely during the night, so that the daily supply would be on hand at 8 a.m., the markets could be stabilized.

Mr. Bunting also complained that the goods sent by the G.T.R. fruit special leaving Niagara Falls at noon and St. Catharines at 1 p.m., were not in the Toronto market until the next morning, taking 18 hours for delivery. The equipment of the train is unsatisfactory.

### Fighting Fund of B.C. Growers

The B. C. Fruit Growers' Association realize that much of their success is due to the maintenance of their Organization and Emergency Fund. Accordingly the last week of March was made an "Organization and Emergency Fund Week." Plans were made for local committees to interview and present the case to every grower in every district so as to secure the full co-operation and agreement of each one.

The fund is made up of an assessment of one-quarter cent per box on apples, crab apples and pears; one-quarter cent on all berries; and one-eighth cent per crate on stone fruits. This sum, though small from each grower, gives sufficient to meet emergencies and protect the industry.

### Okanagan Growers Meet

A harmonious meeting marked the annual convention of the Okanagan United Growers on March 22. Capt. Mutrie, the president, referred to the difficulties of the past eight years and how all had been smoothed away. He ascribed much of the success to the establishment of the Growers' Sales Agency in 1917.

An encouraging financial report was presented by the Board of Directors. The total sales of fruit and vegetables for 1920 amounted to \$2,060,431.21, being made up of \$1,545,870 from local associations and the balance from unaffiliated associations, purchases, etc. This showed a decrease from 1919 of \$119,366.00. The decrease was due largely to a small crop and the demoralized conditions of the American market. The cost of handling business on behalf of affiliated local associations was 3.8 per cent of the value of sales, as compared with

## "The House of Quality"



Our Flower Seeds are the acme of perfection. All discriminating gardeners sow them.

It does not make any difference what you buy from us, be it Seeds, Plants, or Bulbs, the quality is the same—a little better than the best.

### TESTED NOVELTIES FOR 1921

**SWEET CORN, De Lues Golden Giant**—Earlier and three times as large as Golden Bantam, and has all the good qualities of that variety. We offer seed which was grown and packed by the originator, at the following prices: 2 ozs., 35c; 4 ozs., 50c; 8 ozs., 85c; 16 ozs., \$1.50.

**NEW MUSK MELON, "Oka"**—A selection from the product of Montreal Market, crossed with a red-fleshed variety, and is the sweetest and most juicy of all varieties. The color is of a beautiful cream color, with bright salmon-colored flesh that is very thick. The richest-flavored melon in the market. Pkt., 50c.

**NEW ALBINO TOMATO**—Pure white in color, containing no acid whatever, very handsome, smooth fruit, a good cropper, and medium early. Pkt., 30c; 4 for \$1.00.

**ASTER, "Heart of France"**—The best pure Aster ever introduced. Startlingly beautiful. Pkt., 25c.

**ASTER, "Peerless Yellow"**—A beautiful chrysanthemum, yellow. The plants are completely covered like a golden dome. Pkt., 25c.

**ASTER, "Balls White"** (first time offered)—Perfectly double, of flawless purity and form. Pkt., 25c.

**BLUE LACE FLOWER (Didiscus Coeruleus)**—Of extremely easy culture, covered with beautiful pale blue flowers, and the more they are cut the more they will bloom. Can be sown outdoors in May. Later, thin out to 12 inches apart. Pkt., 25c.

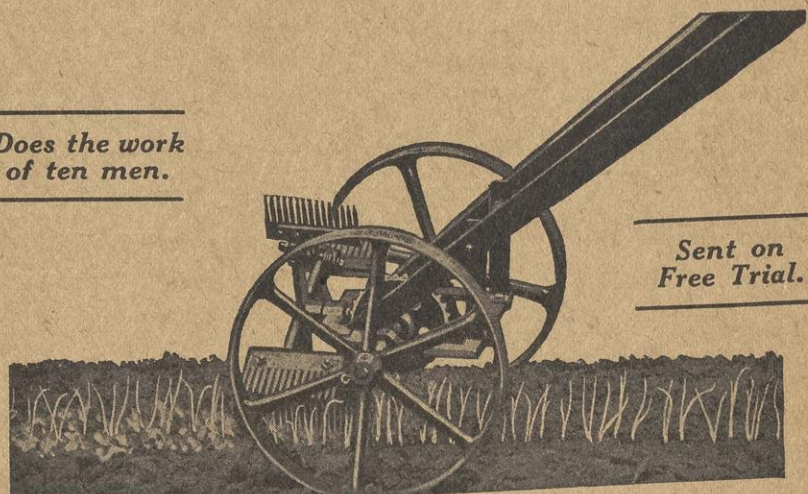
A list of Gladiolus covering 125 of the finest varieties to date will be mailed on application.

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Does the work  
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Sent on  
Free Trial.

It gets those weeds that grow directly in the row.

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**FARMERS, ATTENTION.**—Our automatic farm-gate operating appliance is a great convenience and time-saver. When applied to gates that are used often by autos, trucks or tractors, you can open and shut the gate without leaving machine. Send for description.

### R. G. BRUNER MFG. CO.

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## Sow Only Tested Seed Grain



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Soil, weather conditions, rainfall, all have a bearing on the success of your crops; but the importance of sowing good Seed Grain cannot be exaggerated. Buy only pure seed of high germination tests, and thus increase your yield per acre. The Manager of this Bank will help you to obtain Tested Seed Grain. Consult him about it.

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With its 149 branches in Ontario, 47 branches in Quebec, 1 branch in New Brunswick, 3 branches in Nova Scotia, 44 branches in Manitoba, 44 branches in Saskatchewan, 87 branches in Alberta and 14 branches in British Columbia, serves rural Canada most effectively.

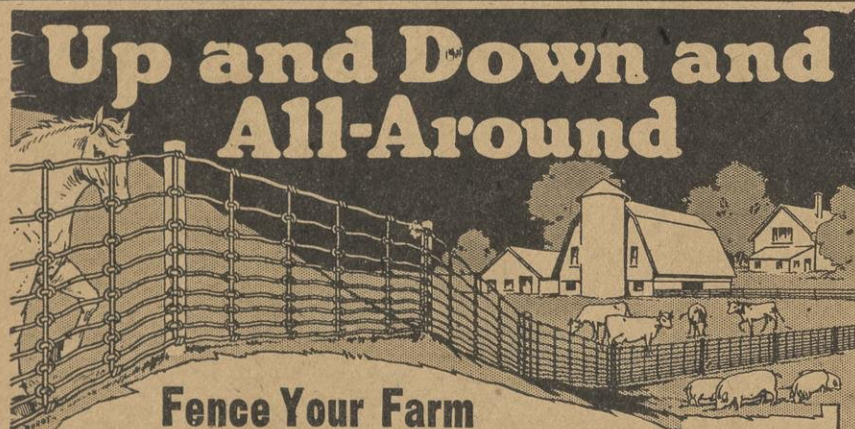
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THE facilities of this bank are far-reaching in extent and based on great strength and resources.

We are prepared to render efficient, prompt and courteous service in all departments of banking.

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It doesn't matter what your fence problems or needs are. Our Sarnia Farmers' Friend Fencing will meet your requirements. We make fencing in great variety of styles, weights and purposes. By our consistent, low price policy and the co-operation of our farmer friends, we have brought down fence prices to a very low level. Our factory to farm policy has saved the farmers of Canada hundreds of thousands of dollars. Go back to the time before we started in business and you will find that fence manufacturers were waxing fat by exorbitant charges. We have done more than any organization or institution to put the fence business in Canada on the square deal basis. Our guarantee says if not satisfactory your money refunded.

The Best for Wear **SARNIA** Sure to Please

Fence has always been sold on the make good basis. The construction of our fencing and the varieties we make are all set forth in our literature, which we will gladly send you upon request. With every modern facility, quantity production, and a knowledge of the fence business as it applies to the farmers of Canada, puts us in a class by ourselves. The Sarnia Farmers' Friend Fencing leads in Canada. This is proven by the thousands of testimonials received from satisfied customers. Our stick-tight, non-slip knot, made from the same gauge wire, is used in our fencing. A knot that wears out before the lateral wires is not the kind of a knot that we recommend.

Special prices quoted on just what you need. Your neighbors or your Farmers' Club should order Sarnia Fencing with you and save more money.

**33 CENTS** a rod and up in Old Ontario. Write us about your fence requirements and we will quote you prices, freight prepaid, to your home town. Do it now.



THE SARNIA FENCE CO., Ltd.,

Winnipeg,  
Manitoba.

Sarnia,  
Ontario.



7.6 per cent in 1916. The revenue for handling charges on fruit sold for our locals was 3.9 per cent of the selling price, as against 5.3 per cent. in 1919, 5.6 for 1918, and 7.3 for 1917.

The election for officers and directors resulted as follows: President, J. T. Mutrie; Vice-Pres., E. R. Simpson; Sec.-Treas., W. C. McDowall; directors, L. J. Proctor, R. T. Skelton, J. T. Mutrie, E. Trask, E. M. Caruthers, J. E. Edgecomb, E. R. Simpson, and G. Baskin.

## Good Year for V.F.U.

Highly satisfactory reports and an excellent address on "Marketing" by Sales Manager Chas. L. Lowes, of the Okanagan United Growers, Ltd., marked the annual meeting of the Vernon Fruit Union. There was a good attendance of shareholders, who expressed satisfaction at the showing made during the year. The growers were disappointed in a big crop, and the Union could have handled twice the amount of fruit that went through. Prices received by shareholders were, however, better than those secured by other growers in the valley.

Officers and directors were elected as follows: President, F. D. Cossitt; Vice-Pres., W. F. Laidman; Sec.-Treas., K. W. Kinnard; Directors, W. F. Laidman, F. B. Kossitt, E. Trask, Geo. Heggie, J. D. Godwin, P. R. French, T. R. French, J. T. Mutrie, A. T. Howe, Major Homer-Dixon, F. E. R. Wollaston.

Mr. Lowe, of the Okanagan United Growers, addressed the meeting on the operation of the Growers' Sales Agency, the selling department of the O. U. G. The Okanagan Valley Growers, he pointed out, had received 50c more for their apples during the past year than any other section on the continent. In Washington, due to lack of co-operation, apple returns are from 50c to 75c less than last year. The Growers' Sales Agency has offices in many cities, which handle everything from bananas to peanuts and represent the best fruit shippers on the continent with the exception of the Sunkist orange growers.

Prices for 1921 will be on the down grade, and it is already estimated that a yield of from 40 to 50 per cent higher than in 1919 may be expected. It is also expected that apples next fall will be shipped to Great Britain through the Panama Canal.

## Carload Shipments for 1921

The conditions governing carload shipments are quite different to those which were effective the past season.

The Express carload tariff, applying on fruit and vegetables from Ontario points to points in Western Canada and the Maritime Provinces, effective May 1st, 1921, provides as follows:

(1) Fresh or green fruit and vegetables only.

(2) Rates provided apply from or to the points named only, except that the rates from or to intermediate points will be the same as shown to the next point on direct line.

(3) Rates will not apply as proportional rates.

(4) Shipments must be loaded and packed in a car by shipper at shipper's count, and unloaded at destination by consignee at his or shipper's expense. No allowance is made to shipper for loading, slatting or bracing of cars, or for any other service performed.

(5) Cars may be opened and partially un-



loaded at not more than two intermediate points through which the car must pass enroute from initial point of shipment to final destination. An additional charge of \$6.00 will be made for each such partial unloading.

(6) Cars will be set out of train at partial unloading points and forwarded on next train, unless the unloading can be done without delaying or breaking the train.

(7) No allowance will be made for shortage in count, and unloading must be performed by consignee or his agent.

(8) With each carload shipment a written memorandum showing number of pieces loaded in car, name and weight of commodity, name of consignee, destination and any special instructions, must be delivered to the express agent.

(9) When ventilators, grates or doors are left open by request of shipper, the Company will not be responsible for damage or theft.

(10) No cartage service will be performed.

(11) Minimum billing weight 20,000 lbs.

(12) Company does not guarantee time of delivery or condition of contents of car upon arrival at destination.

The vegetable growing business is poorly balanced if we depend upon an unknown quantity in our seed.—N. F. Thompson, Amherst, Mass.

## PLANTS FOR IMPORTATION

Roses, Buxus, Azaleas, Paeonies, Flowering Shrubs of all kinds for outside and for forcing.

FRUIT and NURSERY SEEDLINGS for budding  
EVERGREENS and TREE stock  
LINING OUT STOCK of all kinds  
ANY QUANTITY. BEST PRICES

BOSKOOP

HARRY KOOLBERGEN

HOLLAND

Send all enquiries and orders to Arch. P. Marshall, Niagara Falls, Ont., Canadian Agent.

## DOMINION SEEDS

WON'T STAY PLANTED—"THEY COME UP"

Take no chances when purchasing garden seeds. Dominion seeds are higher grade and produce big crops. Ask for our 80-page Garden Book.

FREE.—Send us your name and address and we'll mail you our 1921 Seed Catalogue.

DOMINION SEEDS, LIMITED

LONDON

CANADA

## Frost Woven Lawn Fence

*Enhances the Value as well as the Beauty of Your Home.*

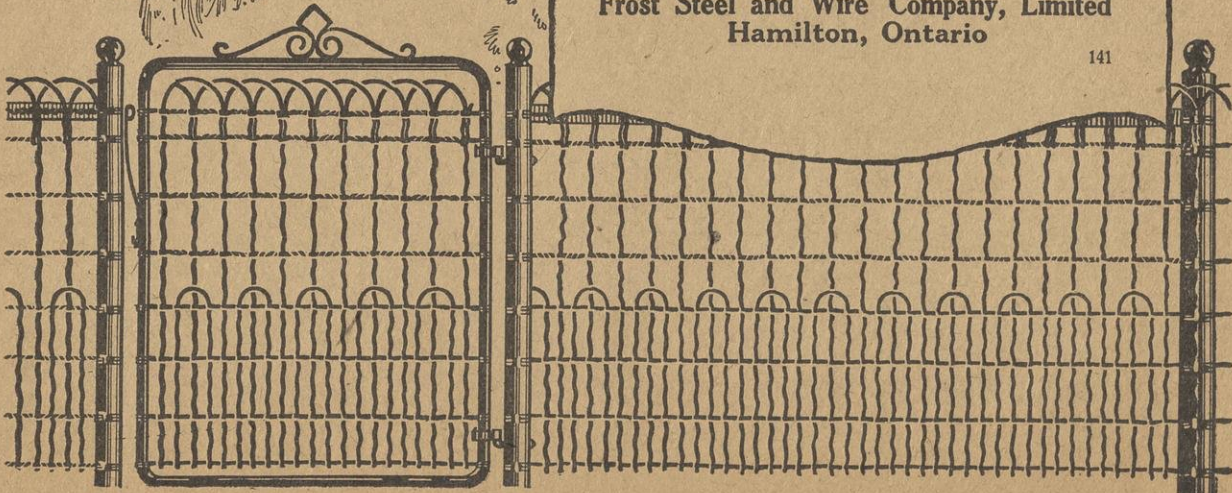
Many a beautiful and substantial home appears to be in a tumbledown condition simply because of an unsightly fence.

A Frost Woven Lawn Fence will add considerably to the actual value of your property and will lend an air of dignity and refinement to your dwelling. The sunshine will penetrate into corners which were formerly dark and damp. The flowers will flourish. The grass will grow green. Your lawn will be a clean healthy place for the children to play.

Frost Woven Lawn Fence is finished in a bright and heavy coat of zinc. You can buy any number of feet you require rolled up compactly and ready to fasten on the posts. You have your choice of three styles,—“S” (as illustrated) “L” (without the small bow) and “LP” (close wires all the way to the top). Height—36"—42" and 48".

Frost Steel and Wire Company, Limited  
Hamilton, Ontario

141





## Market Gardeners

### HIGH QUALITY

## VEGETABLE SEEDS

Low Prices Quick Service

BEET, Detroit Dark Red, . . . lb. 90c: oz. 15c  
 BEANS, Golden WAX, 5 lbs. or over at 20c lb.  
 CABBAGE, Copenhagen Market, lb. \$3.50  
 . . . oz. 25c  
 CABBAGE, Danish Ball Head, lb. \$2.50: oz. 25c  
 CARROT, Chantenay, . . . lb. \$1.00: oz. 15c  
 CELERY, Golden Self Blanching, oz. \$1.00  
 . . . Pkt. 25c  
 CAULIFLOWER, Snowball, 1 lb. \$9.00: oz. \$2.50  
 CUCUMBER, Perfection, . . . lb. \$1.25: oz. 15c  
 CORN, Bantam, . . . 5 lbs. or over at 17c lb.  
 CORN, Evergreen, . . . 5 lbs. or over at 17c lb.  
 LETTUCE, Grand Rapids, lb. \$1.00: oz. 15c  
 LETTUCE, Big Boston, . . . lb. \$1.00: oz. 15c  
 PARSNIP, Hollow Crown, . . . lb. 75c: oz. 15c  
 ONION, Globe Danvers, . . . lb. \$1.50: oz. 20c  
 ONION, Prizetaker, . . . lb. \$1.50: oz. 20c  
 ONION, Red Wethersfield, lb. \$1.50: oz. 20c  
 ONION SETS, Yellow, 50 lbs. or over at 10c lb.  
 ONION SETS, White, 50 lbs. or over at 12c lb.  
 PEAS, Alaska, . . . 5 lbs. or over at 13c lb.  
 PEAS, Gradus, . . . 5 lbs. or over at 25c lb.  
 RADISH, White Tip Turnip, lb. \$1.00: oz. 15c  
 SQUASH, Hubbard, . . . lb. \$1.50: oz. 15c  
 SQUASH, Summer Crookneck, lb. \$1.50:  
 . . . oz. 15c  
 SQUASH, Vegetable Marrow, lb. \$1.50: oz. 15c  
 WRITE FOR CATALOGUE

GEO. **KEITH** AND SONS  
 124 KING ST. E. — TORONTO



We have a large  
 stock of all sizes  
**FLOWER POTS**  
 FERN OR BULB PANS

AZALEA POTS  
 and Rimless Pans

Order Filled Promptly.

Send for Prices

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

## Seed For the Gardener

The old standard seeds for the garden cannot be improved upon, in the judgment of W. T. Tapley, horticulturist, at the University of Minnesota. The amateur gardener is, however, advised to take a chance once a year by planting something he has not before planted. Thus he can add a new interest and gain new zest for the season's labor.

Mr. Tapley says the following varieties are of proved value and should form the bulk of the seed order: Wax beans, Wardwell, Pencil Pod; green beans, Bountiful, Refugee; beets, Crosby's Egyptian, Detroit Dark Red; cabbage, Wakefield and Copenhagen for early and All Seasons for late; carrots, Chantenay; celery, Self-Blanching, Winter Queen; sweet corn, Golden Bantam, Stowell's Evergreen; lettuce, leaf, Grand Rapids; head, Big Boston; onion, Globe; parsnip, Guernsey; peas, Alaska, Marvel, Telephone; peppers, Ruby King; radish, French Breakfast, Scarlet Globe, White Icicle; squash, Hubbard, Delicious, Table Queen, Crookneck; tomatoes, Earliana, Bonney Best.

## Agriculture And Electricity

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

Experiments in Great Britain have shown that both vegetables and grain under electric stimulus, besides showing much increased yields, resist disease in a most remarkable manner. A test was made recently with some infected cucumbers, and in 82 p.c. of the cases the current overcame the disease.

It is now recognized that electric stimulation makes a plant practically fungus proof. Why is it that little or no advantage has been taken of the above discovery here?

## How Bananas Grow

The banana blooms once, bears once and is gone. When the fruit begins to yellow and the long leaves to droop, four little banana plants shoot up next to root, and by the time it either falls down, having withered at the root, or is cut down, these little plants have taken its place four times over.

For several months the banana acts like

other trees. Then, zip! One morning you look out and there is a banana in blossom, the flower the size of the bunch it is later to become. It hangs suspended from the tree's height, with a great purple red bud like a flower-tassel at the end, and there it hangs until the stem is crowded thick with wee bananas. And there they hang until they are ready to be eaten.

It is said that apples may be kept two years by wrapping them in newspapers so as to exclude the air. The newspaper must, however, be one on which the subscription is paid in full, or the dampness resulting from the 'due' will cause the fruit to spoil.

It has been suggested that farmers' clubs make a survey of orchard conditions in their districts, and then subdivide their clubs into small groups of farmers who grow apples and who would arrange to have their orchards sprayed at the same and proper time. The suggestion is good not only for having more and better spraying done, but also for stimulating enthusiasm in reviving orcharding generally.

**TREES & SHRUBS**  
**BROWN BROTHERS CO.**  
 NURSERYMEN LIMITED  
**BROWNS NURSERIES, ONT.**

## APPLE BARRELS

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

**JOHN HAYNE**

SARNIA

ONTARIO.

## FRUIT BASKETS

11 and 6 Quarts

The new government standard. We would be pleased to supply your requirements for this year.

Write us for prices.

Agents Wanted

**HYSLOP & SONS**

GREENSVILLE - ONTARIO

## GLADIOLI

Some of The Best

All Flowering Size Bulbs

1 1/4" and Over

	Each	Dozen
Europa, snow white . . . . .	15c	\$1.25
Loveliness, beautiful cream . . .	10c	1.00
Mrs. Frank Pendleton, salmon pink . . . . .	15c	1.25
Niagara, creamy yellow . . . . .	10c	1.00
Prince of Wales, light salmon . . .	15c	1.25
White Giant, large white . . . . .	25c	2.50
20 mixed bulbs to one address . . . . .		\$1.00

My price list of all the leading varieties for the asking.

**ROBERT CAMERON**

210 Ontario St.

St. Catharines, Ont.

# It's a Fact-You Know Every Farm Needs Fertilizers

Try as you will, you cannot get bumper crops from your soil if you don't fertilize it. There is no mystery about this. It simply means that, as soil gets worn out, Fertilizers must replace the elements that have been used up.

## "Best-by-Test" FERTILIZERS

Best-by-Test Fertilizers have full analysis strength—guaranteed. Write us for particulars and we will advise the kind of Fertilizer to order. We are exclusive Fertilizer experts and can supply all and every chemical required. Farmers can club together and buy in car-load lots. Prices on application.

Write for interesting book on Fertilizers—FREE.  
**CANADIAN FERTILIZER CO., LIMITED**  
 16 Market Chambers, Chatham, Ont.



## SOCIETY NOTES

### Paeony Show in Toronto

Dr. F. G. Brethour, Toronto, Ont.

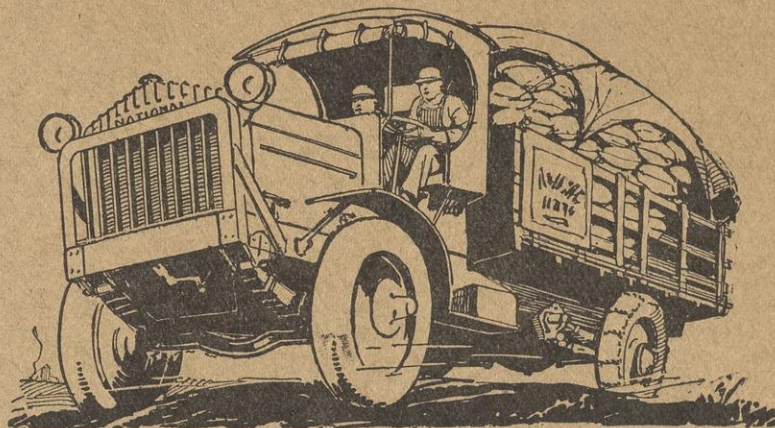
**T**HE Toronto Horticultural Society will this year hold one of the biggest flower shows ever staged in this country. It is chiefly a paeony show, but there will also be exhibits of perennials, biennials and shrubs in the form of displays of different size allotments, according to classes.

Paeony enthusiasts have been awaiting an opportunity to show the public what is grown in this province, and they think that now is the opportune time. Few know that the finest varieties in the world are grown in our midst, and I think that nowhere is the quality of bloom surpassed. It will be a revelation to see them and worth travelling many miles.

The committee are thinking of a two-day show, about June 23 and 24. There are 35 or 40 classes divided into open or professional, advanced-amateur, amateur, and novice-amateur. Anyone who grows even one paeony plant may win a prize. The prizes are mostly cash, some gold medals and some fine, named paeony roots, in all amounting to possibly \$250. Some of the firsts are worth \$15 to the winner, and there are first, second and third in most classes. We want exhibitors from all over the province.

#### How to Stage Blooms.

For those who have never exhibited in flower shows, there are a few points to observe. Go over the plants (from which you think you will cut) early in the season, and disbud all the buds but the central one from some of the stems, as most of the classes call for single blooms, not stem or sprays. Then, a day or two before the show, cut those that are not fully opened, and put in water in a cool, dark, airy place in cellar. You can cut these even four or five days before the show if you take them before the centre has expanded fully. A stem up to fifteen inches long is sufficient. Now provide yourself with white tissue paper and cut into strips three inches wide and about twenty inches long. When you are ready to take your blooms to the show, with the fingers of your left hand, press back the petals of each one carefully, so as to make the flower close up as it were, and wind your paper strips several times around. Be careful not to get any water in petals or on the tissue paper. Pack closely in shallow boxes. When you reach the show-room take the stems carefully,



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The factory back of National Trucks represents an investment of millions. It is permanent. It is in business to stay. Its aim is to build a truck that will satisfy the user and the thousands of satisfied National owners are proof that this has been accomplished.

**Made in 1, 1½, 2, 3½ and 5 ton models, there is a National to suit your needs.**

**NATIONAL STEEL CAR CORPORATION, Limited  
HAMILTON, CANADA**

*"Write for illustrated catalogue and name of the nearest National Dealer."*

# NATIONAL TRUCKS



**We Solicit Your  
Consignment**

**Send for  
Shipping Stamp**

## Fruit and Vegetables Solicited

**We Get Best Prices**

**O**UR 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.

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

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



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



## FOR SALE and WANT ADS

Advertisements in this department inserted at the rate of 5 cents per word. Each word, initial or group of figures counts as one word. Minimum 50 cents cash, strictly in advance.

### BEEES AND BEE SUPPLIES

**WANTED**—Bees, full colonies only. A. F. Hodgson, Jarvis, Ontario.

**ITALIAN QUEENS**—Three-banded, select untested, guaranteed. Queen and drone mothers are chosen from colonies noted for honey production, hardiness, prolificness, gentleness and perfect markings. Price, May and June \$1.50 each; 12 or more \$1.25 each. Send for circular. J. H. Haughey & Co., Berrien Springs, Mich.

**FULL COLONIES** in 10-frame Langstroth hives. No disease. Young Italian queens of prolific stock heads each colony. \$25.00 F.O.B. Hamilton, Ont. Write: Peter Stirling, Mount Hamilton, Ontario.

**FOR SALE**—Twenty colonies Italian bees, in ten-frame Langstroth hives. Re-queened in 1920 with queens from Achord's Apiary, Fitzpatrick, Ala. A. D. Harkness, Vineland Station, Ontario.

**QUEENS FOR SALE**—Italian queens, recognized honey-gathering strain. June 10th (a little earlier if possible) until close of season. Untested, each \$1.75, six \$10.00, twelve \$18.50. R. F. Holtermann, Brantford, Ont., Canada.

**HARDY ITALIAN QUEENS**—\$1.00 each. W. G. Lauver, Middleton, Pa.

**GOLDEN QUEENS that produce golden bees**, selected untested \$2.00, tested \$2.50. Safe arrival and satisfaction guaranteed. Clinton Bradway, Monson, Mass.

**"SHE-SUITS-ME"** three-banded Italian queens. After June 15, one to nine queens, \$1.50 each; ten to twenty-four queens, \$1.40 each; twenty-five and up, \$1.25 each. Before June 15, \$2.00 per queen. Canadian bills and checks accepted. Allen Latham, Norwichtown, Conn., U.S.A.

**QUEENS ON APPROVAL**—Bees by package or colony. Write for price list. A. M. Applegate, 840 Main St., Reynoldsville, Pa.

**PURE ITALIAN QUEENS**, \$2.00 each. F. L. Barber, Lowville, N.Y.

**WANTED**—Bees, full colonies. Send price and particulars to Box 40, The Canadian Horticulturist and Beekeeper, Peterboro, Ont.

### BEE SUPPLIES

**600 SLAT SEPARATORS**—Majority have never been used, per 100, \$3.50. Garfield Stewart, Glasgow Station, Ontario.

**FOR SALE**—40 new 2-storey 8-frame hives, set up and wired, \$4.00 each; 40 unbound zinc excluders, 40c each; 30 pounds brood foundation, 5-lb. box, \$3.75; six-frame automatic reversible power extractor, nearly new (Ham & Nott), \$50.00. W. H. McLean, Cardale, Man

**FOR SALE**—Surplus equipment, six-frame power extractor, four-frame extractor, cappings melter, wax press, single and double winter cases, engine, saw table and saws, other items. Description and prices on request to Box 44, The Canadian Horticulturist and Beekeeper, Peterboro, Ont.

**HIVES**, Hive markers and Scales. Write for large catalogue of bee supplies and books. Morgan's Limited, London.

**FOR SALE**—A quantity of sixty-pound honey cans, jacketed. Have been used once. Apply Flavell's, Ltd., Lindsay.

**HOW MUCH EASIER TO GET A CROP OF HONEY** if you have a good Smoker with Queen Excluder, Bee Escape Board, etc. We have them. Price list on request. The Ontario Beekeepers' Supply House, Guelph, Ontario.

### EMPLOYMENT

**WANTED**—An experienced bee-man to take charge of 60 colonies of Italian bees and help on a 100-acre farm. Young folks, good company, car, near summer resort. Happy summer and good pay for right man. Modern equipment and outfit. Begin May 1st. Address, J. E. Pollock, 247 Talbot Street, London, Ontario.

**BEEKEEPER** having one year experience wants work in an apiary. Gabriel Cloutier, Box 292, Montmagny, Que.

### DAIRY SUPPLIES

**MILK TESTERS, SCALES AND WOOD Soled Shoes**—Write for catalogue of all dairy supplies. Morgan's Limited, London.

### MISCELLANEOUS

**WE SAVE YOU MONEY**—Write for catalogue of seeds, shrubs, garden supplies and fertilizers. Morgan's Limited, London, Ontario.

**FOX FARMING**—Select stock for sale. Correspondence solicited. Literature free. Blake Vannatter, Georgetown, Ontario.

### POULTRY

**FOR SALE**—Hatching eggs, individually trapped, White Wyandottes, pedigreed, hardy, winter-laying strain. Settings \$3.00 and \$5.00. A. Keays, Perth, Ont.

### SEEDS, BULBS, PLANTS, SHRUBS

**BULBS OF ALL DESCRIPTIONS**—Write for prices. C. Keur & Sons, Hillegom, Holland. New York Branch, 82-84 Broad St.; also 10418-113th St., Richmond Hill, L.I., N.Y.

**BAKER'S DOZEN** (13) following Gladioli, my selection \$1.00—Red Emperor, White Giant, Conspicuous, \$1.50 Doz. Prince of Wales, Loveliness, Kennemerland, \$1.00, Schwaben 75c. J. Kennedy, R.R. No. 1, Stratford, Ont.

**VENDEL & VAN GINHOVEN**, 116 Broad St., Room 40, New York, N.Y. Your address for Holland-grown Hyacinths, Tulips, Narcissi, Crocus, Lilliums, Lily of the Valley, etc. Please write for catalogue.

**SAVE MONEY**—Import your bulbs and perennials direct from Holland. Get catalogue at once. Morgan's Limited, London.

**STRAWBERRY PLANTS FOR SALE**—Senator Dunlap only. Splendid roots, well packed. \$6.00 per thousand, \$3.50 per five hundred, \$1.00 per hundred. Leavens Orchards, Bloomfield, Ont.

### REAL ESTATE

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


**Elevates by Air Blast** No Chains Gears or Buckets

Move, clean and grade your grain in ONE operation; fill bins and cars without scooping and make more money by using the

**Liberty Grain Blower**

Elevates 30 feet—300 to 800 bu. an hour. Only ONE moving part. 6 H.P. runs it. One man can move it. Costs half price of old style elevator. Illustrated, tells how to increase grain profits. Send name for copy—card will do.

**LINK MFG. CO.** Dept. 702 Portage la Prairie, Man.



cut a piece off the end of each, unfold the paper, give the flower a shake, and place immediately in water. All labelling should be done when the bloom is first cut from your plant, as you might get mixed as to the name later. Paeonies will travel long distances this way.

We expect over 2,000 blooms to be staged, and such varieties as Le Cygne, Kelway's Glorious, Therese, Lady Alexandra Duff, Solange, Le Fee, Madame Jules Dessert, should be seen in perfection.

### London

The membership of the Horticultural Society to date is now 911, an increase of nearly 350 in the last month. Spring premiums, however, have been ordered for 1,500 members. These will be given out by the first week of May, and notice will be sent every member. If every one of the 911 members signed up at the time of writing (April 5) will only get one new member, we will not be far from our 2,000. The rest will come themselves. Will not every member just get one new one?—your next door neighbor, if you are on speaking terms with him, and if not, your best friend. They will appreciate belonging to our society, just as you do. Send the dollar in an envelope to the secretary, and a membership card will be returned by mail. None have gone astray yet. Now, altogether for double the membership.

ED. WYATT, Secretary.

### A Garden Diary

Did you ever keep a diary of your garden ing operations? This is one way to not only increase your interest tremendously, but also to give you a fund of reliable and useful information for future seasons.

No matter how small the garden jot down when you sow your seeds, the quantities, varieties, number of rows, the distance apart; also the day you pick your first peas and so on.

Keep a copy of your seed order with quantities and prices, and where you bought them. Note any seeds that fail to come up. Write down any manure you use, any fertilizer you try, making a special note of its effect upon the various crops.

Other items of interest are the number of plants you get from the seed bought, when planted out; also the price they bring if sold.

Make notes of pest attacks and the remedies tried.

A garden diary should be a life history of ever; crop from seed time till harvest. See how useful it will be next year, if you have succeeded well, and more especially if you have failed, as it will stand as a reminder against future mistakes.

Some reasons why shipments do not reach the markets in proper condition: Illegible writing; labels will not stick on; two or more addresses on a shipment.



## McConnell's Plant Catalogue

Lists over one hundred varieties of small fruits, etc. The leading varieties of Strawberries, including Everbearing; Raspberries, Currants, Gooseberries, Grapes, Blackberries, Asparagus, Rhubarb, Ornamental Shrubs, Bulbs, etc. Express and postal charges prepaid on orders anywhere in Canada. Write for free copy.

**H. L. McCONNELL & SON**

PORT BURWELL,

ONTARIO



# STOP THIS WASTE!

Grow better fruit and vegetables



**Spramotor**  
It isn't a SPRAMOTOR unless we made it

**Kills Rot and Scab  
Kills Blight and Pests  
Kills Bugs and Worms  
Kills Weeds**

**5.** **FREE BOOK**

**THIS** All-Canadian spraying machine has been on the market over 25 years, and proven best for Canadian use. In that time it has repeatedly met the world's best in competition and captured over 100 Gold Medals and First Awards, including the coveted Canadian Government spraying contest award.

**FREE!** Crop Disease Booklet containing Government Reports and information. Write for your copy to-day.

**SPRAMOTOR CO., 14 KING STREET, LONDON, CANADA.**

A Spramotor will double and treble your yield of apples, pears, peaches, grapes, plums, etc., and get you better fruit. It will do the same with potatoes and row crops, kill mustard in the growing grain, spray paint, whitewash and disinfectant on barns, stables, pens, etc., six times as quick as by hand. All styles and sizes, \$7. to \$400.

*Please Mention The Canadian Horticulturist—Results Count*



## BEAUTY and ATTRACTIVENESS

are the result of  
**CLEANLINESS and ORDER**

**CLEAN UP!**

### Prevent Fires by Removing the Cause

Your home, shop or factory will be safer and more attractive.

The shortage of houses makes their protection imperative.

Popular literature, "Conservation of Life and Property from Fire" and "Lightning, its Origin and Control," may be had for the asking.

**Ontario Fire Prevention League, Inc.**

In Affiliation with Ontario Fire Marshal's Office.  
153 UNIVERSITY AVENUE TORONTO  
George F. Lewis, Secretary.

## Have You a Market?

**YOU** are anticipating a good crop this season. Where will you sell it; or, in other words,

### Have You a Good Market?

for your fruit and vegetables which will return you

**GOOD PRICES and PROMPT SERVICE**

Let us do your selling. We have an organization and a staff skilled in handling fruit and vegetables in any quantity. We have a wide connection, and can get you top prices for your shipments.

**Try us This Season**

**WHITE & COMPANY, Limited**

Front and Church Sts. TORONTO, ONT.

Wholesale Fruit Importers and  
Commission Merchants



# COPPER LIME ARSENATE APPLE DUST

*Formula of Mr. G. E. Sanders and  
Staff of Dominion Entomological  
Laboratory, Annapolis Royal, N.S.*

## 300 Tons in Nova Scotia

ANNAPOLIS Valley growers used nearly 300 tons of Dust last year, most of which was mixed with J C Spray Chemicals. Results were eminently satisfactory. Many Ontario users had similar satisfaction.

THIS J C Product is a winner. Like all of our insecticides, its physical condition is perfect and the analysis is absolutely guaranteed. It can be speedily and economically applied at precisely the right time and is most effective in results. The complete Dust comes in 100 lb. and 200 lb. barrels, but, if desired we can supply the ingredients with accurate mixing directions.

ALSO IDEAL  
for

## POTATO CROPS

John Cowan Chemical Co.

Limited

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11 Dalhousie St. - - - MONTREAL

LEAD ARSENATE  
CAL-ARSENATE (Arsenate of Lime)  
BORDEAUX MIXTURE  
BORDO-ARSENATE



DEHYDRATED COPPER SULPHATE  
COPPER LIME ARSENATE DUSTS  
SOL-ARSATE  
BLUESTONE