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# THE

CANADIAN HORTICULTURIST &

# BEEKEEPER

Vol. 26, No. 8, August, 1918  
\$1.00 per Year

TORONTO, ONT.  
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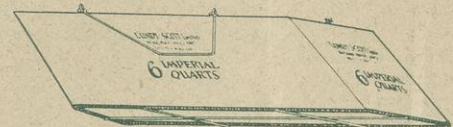
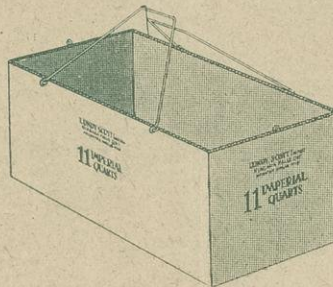
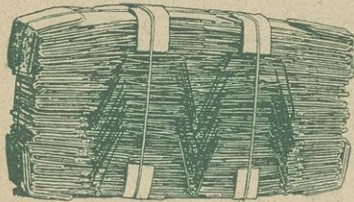
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## The Canadian Horticulturist

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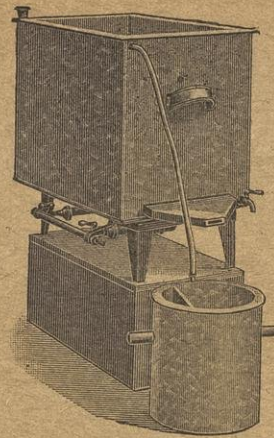
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**THE CANADIAN HORTICULTURIST**  
PETERBORO - - - - - ONTARIO



# The Canadian Horticulturist and Beekeeper

(See Pages 199-203)

(See Pages 199-203)

Vol. 26.

TORONTO, AUGUST, 1918

No. 8

## Fruit Marketing Problems

C. S. Thompson

**N**EVER in the history of the Ontario fruit industry have greater problems confronted our growers. On the one hand is the desire of every grower to produce as much fruit as possible in response to the demand for greater production, and to help out the food situation; on the other hand is the memory of the past three poor years, the great shortage of labor, greatly increased cost of spraying materials and other accessories, and restricted markets.

With only two markets, those of Ontario and the west, it is evident that Ontario fruit growers will have to adopt better and more progressive methods to meet the situation. In the first place, there should be an increased consumption by the public at home. This object is being promoted by the Food Controller, whose efforts might be supplemented, if crop conditions warrant it, by an advertising campaign somewhat similar to the one that was inaugurated two years ago through the newspapers, and to the campaigns which have been conducted by the British Columbia growers in the prairie provinces.

To compete successfully with the high grade fruit which reaches Ontario from British Columbia and the Yakima Valleys, even in spite of the increased tariff, it seems as though our fruit growers will have to adopt more stringent standards of practice and live up to those standards. The recent amendments to the Fruit Marks Act will aid greatly in this direction. Fruit growing has reached the point in Ontario where the fruit grower who is part farmer has to make a choice. Because of the labor shortage and other factors, he either has to go in for fruit growing as a profession or else do away largely with his fruit, other than for home and local use, and devote more of his time and attention to other branches of agriculture. Changing conditions have made fruit growing largely a matter of scientific production. If we want high grade fruit and the kind that will compete with the very best of imported stock, we will have to go into the matter of production thoroughly.

It is a good thing sometimes to get the ideas of the other fellow. Recently I was interested by a conversation I had with Mr. W. J. Oke, of Peterboro, a wholesale fruit dealer who has had a wide experience also as a retailer, and thus knows the attitude of the buying public as well as of the trade.

The first point he raised was one that has often been raised before, but never fully answered, namely: Why don't Ontario fruit growers box more of their apples? "We have," he said, "in Ontario, apples that are second in quality to none, and many varieties have a fairly good color. If they were properly graded, wrapped and packed in boxes, they could be sold just as well as British Columbia or other imported apples, even although they may not be as highly colored. There are thousands of people in our cities who would be only too glad to buy a box of apples, particularly if they knew they were good old Ontario varieties, where now they scarcely buy any, because, living in flats and rooms, they have no facilities for storing larger quantities such as a barrel."

One complaint which Mr. Oke made was that in buying Ontario fruit, and this applies especially to apples, he cannot depend on getting properly packed and graded fruit, except from a very few growers. As a result of long experience, Mr. Oke has lost confidence in the average pack of Ontario apples. This is partly because only a small part of the crop is packed co-operatively. When I asked him what he would suggest, he replied that Ontario growers should do as the British Columbia growers do. "They should co-operate more, standardize their grades and be willing to accept orders earlier in the season." Last year in May, when the orchards were just in bloom, he wrote to a British Columbia fruit grower for quotations on a couple of car loads of the coming apple crop. The quotation came by return mail and an order was sent away immediately. "By the time my order arrived," said Mr. Oke, "and this is the point I want to make,—the grower was already booked to full capacity, orders being, of course, contingent on the crop. I would not for a moment think," said he, "of placing such an order with most



Fruit grading machines are helping to solve the labor shortage. The machine used by Rev. Father Leopold, of La Trappe, Que., is here shown. Were more of them used they would prove a factor in improving the fruit pack.



Ontario growers, because few of them produce enough, and therefore I could not depend on getting either the quality or the proper packing. In Ontario, with a few exceptions, because of the conditions mentioned, I only buy when I see the apples."

Another idea which Mr. Oke advocated was the employment of a messenger service on fruit cars for medium and long hauls. This would apply only in the case of tender fruits. Mr. Oke claimed that this is the only method of ensuring that the fruit will be delivered promptly and in good condition. "The waste of fruit on the railroads all the year round," he said, "is prodigious, and yet we are asked to conserve it. No doubt the railroads are confronted by big problems, shortage of labor, and a heavy demand on their rolling stock; but perishable goods should have first consideration, especially all kinds of foodstuffs." In mentioning this point, Mr. Oke said that the waste by cold storage plants is but a tithe compared with what is wasted on the railroads. As one instance, he mentioned three carloads of lemons that were sent to Toronto last winter in one shipment. The railroad was asked to go to any necessary

expense to keep them in good condition, but this was not done, and as a consequence they were frozen and rendered worthless. No doubt the railroads would have to make good the loss, but that would not restore the waste of a valuable product.

A large fruit house in New York employs a messenger service on fruit cars. Mr. Oke buys all the fruit he can from them, as he is sure that when he orders a carload of fruit it will reach him in three days from New York. The shipments of other firms without this service often are nine and ten days on the road. A great advantage is that when the car reaches Buffalo, the messenger opens the car, takes the temperature and the condition of the fruit, and wires the information to the consignee. Thus the buyer knows the exact condition it is in and how it should arrive, and he is then in a position to dispose of it as its condition warrants. Of course, the service costs more, but buyers prefer to meet the extra expense that they may have the satisfaction and protection it affords. Mr. Oke suggested that the local fruit associations during the tender fruit season should employ at least a limited messenger service.

## European or Vinifera Grapes Grown at Ottawa

W. T. Macoun, Dominion Horticulturist

THE European or Vinifera grapes have been very little grown in Canada. The experience in the Eastern States in attempting to grow them was so discouraging, that, doubtless, the old settlers in the Province of Ontario did not feel very enthusiastic about trying them, and as new, vigorous, and hardy varieties of American origin began to be introduced in the early part of the 19th century, there was little inducement to test them. The European grapes must be covered with soil in winter, but, apart from that, they are treated much as the American varieties. They are not recommended to be grown commercially, but for home use only. The oldest record of the successful cultivation of a European grape vine in eastern Canada that we have is that of a vine in the garden of a citizen of Perth, Ont., which is said to have been introduced from Italy nearly ninety years ago. This is an early green grape of the Sweetwater group. This variety is now growing at the Central Farm.

The first experience with the European or Vinifera grapes at this farm was in 1900, when cuttings of a variety called "Bonne Madame" were obtained from Mr. D. Matheson, Ottawa, Ont. This variety was obtained by Mr. Matheson from a Roman Catholic institution in Montreal, and it was supposed to have come from Italy. It also is of

the Sweetwater group. Two vines of this grape were planted in the vineyard in Ottawa in 1902, and the first fruit was produced in 1905. This variety was found to be one of the earliest ripening sorts in the vineyard, and has continued to be so.

As it was thought that there might be other Vinifera grapes which would ripen at Ottawa, a number of varieties were imported from France and Germany in 1909, and the following is a list of these with notes as to whether they ripen at Ottawa or not:—

Black Alicante.—Does not ripen.  
Black Hamburg (Frankenthal).—Does not ripen.

Bonne Madame.—Ripened every year until recently when old vines were destroyed, and the new ones are not in bearing.

Buckland Sweetwater.—Ripens in some seasons.

Chasselas Dore de Fontainebleau (Weisser Gutedel).—Nearly ripens, ripens in some seasons.

Chasselas Gros Coulard.—Ripens in some seasons.

Chasselas Rose Royale.—Does not ripen.

Chasselas Rouge (Roter Gutedel).—Ripens in some seasons.

Chasselas Vibert.—Nearly ripens.

Chasselas Violet.—Nearly ripens.

Foster White Seeding.—Nearly ripens.

Fruher Blauer Burgunder.—Does not ripen.

Fruher Leipziger.—Ripens in some seasons.

Fruher Roter Malvasier.—Does not ripen.

Gamay de Juillet.—Ripens very early, but is very small and not desirable for eating.

Grandiska.—Does not ripen.

Gromier du Cantal.—Does not ripen.

Gros Colman (Dodrelabi).—Does not ripen.

Gros Dore.—Does not ripen.

Lignan Blanc.

Liebert.—Nearly ripens.

Madeleine Angevine.

Madeleine Royale.—Ripens in some seasons.

Muscat Noir.—Does not ripen.

Pearl of Casaba.—Ripens very early.

Peuse (Malaga).—Does not ripen.

Portugais Oben.

Precoce de Malingre.—Ripens in some seasons.

Sauvignon Jaune.

In addition to the foregoing a number of varieties were imported from France more recently, none of which have fruited. The best and most promising variety for parts of Canada where the season is as short as at Ottawa is the Pearl of Casaba, a Hungarian variety. Not only is this very early, but it is of good quality and one which is strongly recommended for trial. Following is a description of the fruit:—

Pearl of Casaba: Bunch, length, 5 inches, breadth, 3 inches; form compact; shoulder slightly shouldered; berry, size medium; form round; colour, yellowish green; bloom thin; skin moderately thick, moderately tough; seeds few, usually two, often none; flesh tender, juicy; flavour sweet, sprightly, muscat-like, good; quality good; use, dessert; season very early; evidently not a good keeper. General notes: A very early European grape of good quality.

## Seasonable Reminders

C. F. Patterson, Guelph.

The "Fruit Marks Act" protects the consumer only, but the "Integrity Act" protects both consumer and producer.

If apples are too thickly on the trees, it will still pay to thin them.

Do not place plums or peaches when wet in the basket, as this hastens decay.

Keep an open eye for the Yellow-Necked Apple Caterpillar and the Red-Humped Apple Caterpillar. If they make an appearance, cut out nests and burn.

Remove and destroy all nests of the Fall Webworm as soon as noticed.

Do not put into the basket a peach that you would not eat yourself.

"Handle with care" is the motto which should be borne in mind when picking and handling fruit.

Do not forget that strawberries require cultivation until late fall.

To rise requires years,

But to fall—

Demandeth only moments.

Are you going to defame the good name of your Association for the sake of a few paltry dollars?

This is a good time to remove and burn all old canes of raspberries and blackberries.

To keep the young foliage of strawberries free of rust, give frequent sprayings with bordeaux.

See that the celery gets an abundance of moisture and good cultivation.

Ears of sweet corn can be removed easily by bending down the ear with a slight side twist.



# Cherry Growing in British Columbia

Chas. L. Shaw, Victoria, B.C.

**C**ROP conditions were favorable this year, and through various preventive measures the cherry growers of British Columbia managed to reduce destruction by disease to a minimum. Summerland expects to beat all records in its cherry production this year, and within a few days it will have sent its seventh and last car rolling away to the markets of the prairies.

Past experience in British Columbia orchards has shown that sweet cherries are especially liable to suffer from brown-rot. Death of twigs and the formation of gummosis cankers are often a result. The principal source of the disease each year is the dried-up rotted fruit. Whether this is left hanging on the trees or near the surface of the soil, it produces large numbers of spores in the spring. It has been found of first importance to prune or knock off all the fruit remaining at the close of the season and burn it. This involves a good deal of labor, but it pays. The "mummies" must be either burnt or buried deep enough to prevent them from being brought again to the surface.

Good-air drainage for the orchard and sufficient pruning to ensure ventilation to the interior of the tree are also important. With the larger fruits thinning should be practised, since the rot often starts where two fruits touch. Spraying is also essential. Winter-strength lime-sulphur should be used, and other sprayings are given when the shucks have been pushed off the developing fruit, and about a month before the fruit is ripe, with an intermediate one if necessary. It has been found that ordinary lime sulphur is injurious to the foliage and that 2-3-40 Bordeaux fills the bill. Brown-rot has done most of its destruction in the Lower Mainland, the interior being practically free from its ravages.

Various causes may result in "shot-hole" among cherries and other stone fruit. Usually, however, the disease is not serious enough to require special treatment. A dormant spray of lime sulphur, followed by sprayings of 2-3-40 Bordeaux mixture, has proved effective.

The cell walls of stone-fruit in British Columbia are liable to undergo a change into a gummy substance which exudes at the surface. This is known as gummosis, and it may be caused by a mechanical injury, insect punctures or borings, by winter injury or, more rarely, by fungus or bacterial infection. It may, however, be spontaneous, especially in trees that have made a forced growth, due to too much water or nitrogenous fertilizer, or both. Such trees

are also more liable to extensive gumming as a consequence of any of the injuries mentioned.

Sweet cherry trees are often victims of gummosis, although the virulent bacterial form of the disease, so destructive in some of the southern States, is almost unknown in British Columbia. Sweet cherries should have a well-drained, open sub-soil. Gumming very often follows where cherry trees have been winter-injured. The proper cultural methods and the growing of adaptable varieties for the section is of the greatest importance. Where cherry

trees have become winter-injured on the trunks, a good practise is to slit open the bulged part with a knife. This will allow the air and sunlight to enter and prevent fermentation taking place. Where the bark on the trunk has cracked or the bark heaved away from the wood a few small nails should be driven in to bring it back and hold it in place. Large cankers should be cleaned out, cutting away all diseased tissue until a sound surface is exposed. Corrosive sublimate may be used to disinfect the wound, using one to 1,000 parts of water. These methods have been followed by the most successful cherry and stone fruit growers in the Summerland section for several years and the provincial government's experts are recommending the same treatment.

## White Grubs and Wire Worms

Dr. C. S. Bethune, O.A.C., Guelph, Ont.

**W**HITE Grubs are the larvae of the large dark brown May beetles or "June Bugs," as they are commonly called, which are familiar to everyone. The grubs breed for the most part in old pastures where the sod has not been broken up for some years. When fully grown they are thick, fat creatures, white in colour, with the body partially curled up and the last segments of a darker hue from the food showing through the skin. They feed on the roots of the grass, and when this has been plowed up they attack whatever plant may be grown. Three years are spent underground, then the beetles appear, often in great swarms, in the early summer and devour the tender fol-

iage of trees and shrubs. At this period it would be possible to reduce their numbers by spraying the trees they frequent with Paris green and by employing boys to search for and kill them. After buzzing about in the early evening they settle down to feed, and when daylight comes they hide away underground where the soil is loose and under grass or rubbish about fences and buildings.

The grubs, being underground feeders, are very difficult to control. A great variety of experiments have been made with chemicals of many sorts, but none has proved successful. The only method of control is the adoption of a system of rotation of crops. No field should be



Producing two crops in a south-western Ontario peach orchard.



left in grass for more than three years. An old pasture when broken up is often found to be full of these grubs, and they will attack the roots of any plants that are sown in place of their ordinary food which has been removed. Corn and potatoes will suffer severely, but clover is least affected by them and may be seeded down with rye. After the second year any crop will usually be safe. Deep ploughing in October before the weather becomes cold will expose the grubs and destroy many. Pigs and poultry, crows and other birds and skunks greedily devour them. Where an old field is found to be badly infested, it is a good plan to turn in some hogs; they will soon root out and eat up all the grubs. If the field is large it would be well to confine them with hurdles to a small portion at a time and when that is cleared move them on to a fresh feeding ground.

Wireworms are the larvae of click beetles, so called from their curious habit of springing up in the air with a "click" when laid upon their backs. The beetles are long and narrow, rounded above, with very short legs, and usually dull gray or black in colour. The grubs are long and round, with a very hard skin, from which they get their name of Wireworms, and yellow or whitish in colour. Their life history is very similar to that of the White Grubs, as they thrive in old pastures and take two or three years to mature. They feed upon the roots of any plants that may be grown where they are, and are especially injurious to corn and potatoes, in the latter of which they often burrow great holes. As in the case of the White Grubs, no treatment of the soil with poisons of any kind has been found effective. There is a prevalent idea that salt will kill them, but this is an entire mistake. The only remedy is a short rotation of crops as in the case of White Grubs. Ploughing in August and cross-ploughing in September will destroy great numbers. Clean cultivation, leaving no weeds or other shelter for the beetles, in fence corners and elsewhere is also of importance. Break up the old pastures is the advice all growers should follow.

## Need More Fertilizers

Dr. A. J. Grant, Thedford, Ont.

The crying weakness of most farm apple orchards is lack of fertility. Heavy crops of apples, whether clean or scabby, take a lot out of the soil, and the trees are bound to show poverty in foliage, with consequent lack of fruit if manure is not applied regularly, in sufficient quantity. If we were obliged to grow one crop year after year on the same piece of land, we would never be able to satisfy ourselves with the quantity of manure applied, no matter how

great our source of supply happened to be, and we all know that anything short of a Herculean effort to keep up fertility would mean a steadily diminishing crop.

The poor old apple orchard is struggling to produce the same crop year in and year out, the average attempts at putting back the fertility are far short of an effort that would do credit to Hercules. It pays well to ship in manure from the larger centres and draw it to the orchards in the winter time. Chemical fertilizers are useful, but in my opinion they cannot take the place of barnyard manure; I like to use both, but the price of the chemicals at present is an important consideration. The only economy that should be used in manuring is to place the material only over the feeding roots of the trees, keeping about five feet away from the trunks in all directions.

## Pear Slugs Common

Nearly every year many cherry, plum and pear trees are damaged by the pear slug. This is a very dark, slightly greenish, slimy slug, which appears in June and again in August, feeding upon the upper surface of pear, cherry and plum leaves. Only the fibrous skeleton of the leaf is left. These soon fall off and the tree is greatly weakened by the loss. Thorough spraying with an arsenical spray as soon as the pests appear is recommended by the Ohio Experiment Station. One pound of arsenate of lead paste (or one-half as much powder) dissolved in 10 gallons of water is the formula recommended.

## Roguing Potatoes

Dr. C. A. Zavitz, Ontario Agricultural College.

The average yield of potatoes per acre in the Province of Ontario for the past thirty-six years has been about 115 bushels. The yields vary greatly. In 1917 there were variations in Ontario from 125 or less up to 700 bushels per acre. People are realizing more and more that for high yields of potatoes conditions must be favorable. It is important to have good fertile soil well cultivated and to plant a liberal supply of seed of the best varieties at the proper time. Seed potatoes somewhat immature, which have been produced in a cool climate, and which are comparatively free from disease, are apt to furnish seed of high quality. Even under these conditions it is well to carefully inspect the seed before planting and to thoroughly rogue the growing crop.

A potato field is rogued by removing the undesirable plants. A thorough roguing of the growing crop once or twice during the summer is one of the most effectual ways in ridding the field

of a number of the potato diseases. This operation would also insure the immediate removal of the weak and unthrifty plants which are sure to produce undesirable seed. Potato growers sometimes go through their fields and remove all plants which are not true to type. When roguing is done with a double object of eradicating disease and of purifying the variety, decided advantages are sure to follow. Thorough roguing is one of the best methods of securing pure, healthy seed of high quality.

## Raspberry Leaf Curl

Raspberry Leaf Curl has been known for some time, both under the name given as well as under the name of Raspberry Yellows. Since the curling of the leaves is the most outstanding feature in connection with the disease, it is preferable to use the term Raspberry Leaf Curl.

The disease affects the leaves and shoots and is often confined to a single bush or part of a bush, some of the shoots being perfectly normal and others with the leaves affected. The affected shoots, instead of producing normal large, broad leaves, bear leaves which are conspicuously small and badly curled downwards. In the early stages this symptom is not so pronounced, and while a small amount of curling may occur then, the disease is more noticeable on account of the yellowing which takes place during the summer because of the unhealthy state of the foliage. Since yellowing of the leaves may be due to a number of other causes, such as wet feet, poor soil, drought, etc., it is best to determine the disease mainly by the Leaf Curl symptoms.

In the advanced stages the canes bear no fruit. When first attacked they flower almost normally, but the fruit is small and dry and shrivels up before ripening, so that little or no fruit is ever produced from an infected bush. Of the three varieties which are commonly grown in the Niagara district, Cuthbert, Marlborough and Herbert, the Herbert seems to be freest from the disease. The other two varieties are quite susceptible, but one rarely sees signs of Leaf Curl in the Herbert.

So far as is known, the disease is not due to any parasitic organism. It apparently belongs to that type of trouble which has been called physiological disease, and could, therefore, be put into the same class with peach yellows and little peach, and the mosaic diseases of tomatoes, tobacco, potatoes, and so forth. No records are available as to how the disease is brought into the field in the first place, nor how it is transmitted from one plant to another. It spreads once it becomes established in a



plantation, and many fine plantations are known to have been greatly injured by the presence of a large number of Leaf Curl plants. If the disease corresponds closely with the mosaic or yellow disease, one would suspect that it is carried either by insects or pruning operations.

Although too little is known about Leaf Curl to advise a sure means of control, one should always remove the affected plants as soon as they show signs of disease. They are of no use in

any case, and are likely to spread the disease to other parts of the plantation. In taking out Leaf Curl plants, one should be careful to get the whole of the root system, otherwise the parts that are left will start to grow and produce new shoots which will also show Leaf Curl. It is possible that some of our Leaf Curl originates from nursery cuttings, and some care should be taken when setting out a new plantation, to avoid this disease.—Field Laboratory, St. Catharines, Ont.

quality, a case was sent down to the fruit market and sold, each peach selling for a shilling. Had this fruit been packed warm it would not have arrived in a sound condition.

## Marketing the Berry Crop

L. J. Farmer, Pulaski, N.Y.

When marketing your berries use good baskets and substantial crates. The tendency now-a-days is to use flimsy crates and baskets. It does not pay to save a half cent a quart on your package and lose five cents a quart on your fruit. The 32 qt. or bushel crate is the best ever. We also make up small crates holding 8, 12 and 16 qts. each, for our local parcel post trade. We also put cotton wadding over the top of the top row of baskets, to keep the berries from smashing.

Berry picking seems to develop the worst traits of a person's character. It cannot truly be said that there are tricks in all trades except picking berries. A man who will successfully handle an indiscriminate bunch of berry pickers without losing his temper and cussing some one, deserves a place at the right hand. For thirty-four years I have been studying the question. I haven't solved it yet. One of the worst things to contend with is to get some pickers to fill up their baskets so they will hold out when fixed and placed into crates. The pickers are continually conveying the impression that they are giving you extra measure. How would it do to weigh a full crate of berries and find about what an average quart of strawberries would weigh?

## Marketing Basket Fruits

P. J. Carey, Chief Fruit Inspector, Toronto

THE advertising of basket fruits has not met with the success expected. In the west where advertising has worked wonders, the situation is different from ours. There the packing is taken out of the hands of the growers and superintended by the companies, while in our case there is no control as to uniformity or quality of pack. I am a firm believer in advertising, and in the attractiveness of packages, and for that matter in a fancy label on the package, if under proper control, but where such label gets into the hands of unscrupulous packers, such advertising instead of being an advantage, becomes a boomerang. The best advertisement is an honest package of high quality, and plain marking is safer than a gaudy label, unless you are sure of the contents of the package. The grower who is depending on a loud appearing label, or some such device, to push the sale of his irregular pack, had better get out of the fruit business. The consumer who purchases a package of this kind will not soon forget it, and it will have a killing effect on the sale of the many excellent packs that will appear later on the market.

### Pre-Cooling.

Pre-cooling, or at least shipping in iced cars, is one of the most important phases of fruit handling. I have had an opportunity for fifteen years to observe the condition of fruit on its arrival in Toronto, and it is nothing new to discover that many of the box cars showed a temperature of 90 to 100 degrees. In such cases the fruit has often entered into the first stage of decay before being taken from the cars. Such fruit held for a day or more is sure to give poor satisfaction to the consumer.

Growers say that they are not making any money now, and, of course, will be slow in taking up anything that will involve an increased expenditure. Nevertheless, I draw their attention to the importance of landing their fruit in

such condition as will tend to lengthen life. Using iced cars, as much as possible, would create a marked improvement in the shipping of tender fruits.

To show the wonderful results that may be attained by pre-cooling fruit, I would like to cite one case in point. The Department of Agriculture at Ottawa undertook to ship a number of packages of peaches from the St. Catharines district to the London Exhibition. I assisted in the work of selecting and packing the fruit. We, of course, picked firm specimens, but ripe enough to show plenty of color. The fruit was placed in an iced chamber over night, and then packed carefully in cases, and, of course, was placed in cold storage all through the journey. Those who had charge of the shipment at the other side stated that the fruit landed without showing one decayed specimen. It was on display on plates for at least two weeks. To prove its



Orchard meetings have been held for years in Nova Scotia to promote improved methods. The illustration shows one held in King's county.



Then weigh the picking stands or handies and have them all of uniform weight. When the picker brings in a handy, place it on the scales, deduct the weight of the handy and give the picker credit for the net weight of the berries and baskets, paying by weight instead of measure. Suppose an average four quarts of berries weighed 5 lbs. If the picker brought in 6 lbs. it would make no difference to him, because the total number of pounds for the day would be added up and divided by five, to show the number of full handies or quarts picked. As different varieties vary somewhat in weight, it would be necessary to arrive at some

average for all.

We numbered each berry picker the past season. We put their name and number down on a sheet of paper each day, and gave them each small slips of paper with their number on the slips. When a picker brought or sent in his four quart handy of berries, he placed a number on it. In this way we were able to tell all about who picked that handy of berries. As a result, the standard of picking was raised. We found no leaves or rubbish put in just to fill up, there were less green and rotten berries, fewer hulled berries, and similar efforts to appropriate what they had not earned.

## Potato Diseases

George O. Madden, B.S.A., Dept. Agriculture, Toronto

**P**OTATO diseases can be divided into three great classes. First are those common diseases like ordinary scab and late blight, which are present every season more or less, and cause considerable loss to many growers. Second are those diseases which are noticed when cutting the tubers for seed. Such seed, if planted, will reproduce the disease in the tops, thereby preventing the formation of the potatoes. Black Leg is a good example of this class of disease. The third are of least importance as regards Ontario, but have been becoming more prevalent during recent years. They include the Mosaic and Leaf Roll. These diseases should be looked for, and those plants showing the disease should be promptly removed.

The simplest method of describing potato diseases is with reference to the part of the plant affected, whether it be the foliage, the stems, or the tubers themselves. The following list will give some idea of the various diseases of potatoes, the parts attacked, and how to control them:—

### 1. DISEASES ATTACKING THE TUBERS\* (see June issue); 2. DISEASES ATTACKING THE STEMS.

**Black Leg.**—This disease attacks the stems and tubers. Avoid planting diseased tubers, and when tops are developed, rogue the field for affected plants and remove.

**Little Potato.**—This is caused by disease which is carried in both seed as well as the soil. It is prevented by inspecting the field and removing diseased plants.

**Spindling Sprout.**—Caused by degeneracy of plant due to poor seed. Rogue field in summer.

### 3. DISEASES ATTACKING THE FOLIAGE.

**Late Blight\*.**—This is same organism which causes the late blight rot in the tubers. This disease is spread by means of the tubers being affected when planted, as well as by the wind blowing the spores to other plants. Spray with Bordeaux mixture (6-4-40) at intervals of ten days at least four times during the season. Also rogue the field for diseased plants and avoid planting diseased tubers.

**Early Blight.**—This disease is often troublesome in many places, and is caused by a fungus which is spread by means of the seed used. Plant remains also carry the disease. Control by spraying the plants with Bordeaux mixture (6-4-40) as well as rogueing the field as in the case of late blight.

**Potato Wilt.**—Due to a disease which is carried in the seed. The practice of removing affected plants during the summer is advised.

**Leaf Roll.**—Spread by means of the seed tubers. Watch for tops showing rolling of foliage and remove such plants.

**Mosaic.**—Becoming more prevalent lately. It is a physiological trouble which caused the foliage to become mottled and prevents normal yield of potatoes. Remove affected plants as soon as seen.

**Curly Dwarf.**—Not caused by a fungus, but due to degeneracy in seed. Remove plants appearing with foliage curled.

**Tip Burn\*.**—This is caused by dry, hot weather conditions, such as prevail in July. The tops, if badly attacked, dry up completely. Most seasons it is present, but does little harm unless extreme drought conditions prevail. It is not carried by seed.

## Selecting Show Potatoes

Dig when the ground is dry.

Carefully wrap each tuber separately in paper.

Place in shallow one-layer boxes and store in a dark cool place.

Take out just before time to send the tubers to the show.

Clean them with a soft brush, removing every particle of the dirt.

Avoid pressure in order not to injure the tubers.

Do not wash; tubers wilt if washed and have an unnatural sheen.

Pick out a model of the type, size, color and eyes of the variety to be exhibited.

Make the rest of the lot as nearly like this model as possible.

See that the skin is clean, smooth and free from sunburn, having a desirable luster and bloom and being free from all blemishes of all sorts.

## Packing and Grading

Another difficulty that we have to contend with at the present time and one which causes much trouble in packing houses, is the picking of apples out of season. By this I mean that many are picked before they are ready. In many cases late winter varieties are picked at the same time as earlier varieties. This causes a congestion at packing house, as the earlier varieties are packed first. This means that the late apples will have to remain in the packing house for some time, thereby taking up space and not allowing the grower to use the orchard boxes they are in. In some cases these late apples are packed before their time and are shipped out. This gives them a bad reputation. Much of this trouble is caused by growers not knowing when to pick certain varieties. A remedy for this is for each local or shipping association to notify its shippers when to pick certain varieties.

All of the large shipping associations in the states to the south have field inspectors who notify growers when to pick and deliver apples that are wanted. No grower is allowed to bring in his apples until notified by these inspectors. I believe this system would be of great benefit to apple-growers as well as to growers of other fruits in British Columbia. The British Columbia Fruit Growers' Association have issued a booklet which is a great benefit to fruit consumers. It gives the dates that each variety of fruit is in season, thus giving the consumer the information when these fruits are at their best and when to buy. The practice of putting fruits on the market out of their season often gives the consumer a wrong impression of their value as well as quality.

\*—An asterisk marks most important diseases.



# Bees for the Winter Cluster\*

Belva M. Demuth

## Critical Periods in Colony Existence and Prosperity.

ONE of our favorite amusements at the close of the honey flow is that of checking up the amount of surplus honey each colony has produced, then figuring how much our crop would have been, if all colonies had done as well as the few best ones. Those who have never indulged in this pastime can have no idea how fascinating it is, for the figures sometimes give a theoretical honey crop that almost staggers the imagination. Long before we were married my husband had annually built air castles out of that difference between what the bees actually did and what they might have done. After many years (more than he cares to admit) he says he has greatly profited by the air-castle business, because it has led him to look for the reasons for the difference in yields of colonies in the same apiary, and to correct some of the deficiencies which cause a lower yield.

At the time I came into the firm he was considerably puffed up over his accomplishments along two lines, uniformity in the strength of the colonies at the beginning of the honey flow and uniformity in the strain of bees, all, or nearly all, queens being from the same mother and of the same age. However, in spite of this uniformity along these two lines, the yield per colony continued to vary tremendously.

Of course, we all know that one reason for the difference in yield is that some colonies are thrown out of condition during the honey flow by preparations for swarming, lack of room for storing and ripening the incoming nectar, some accident to the queen, or some other cause or combination of causes. We know that beekeepers have made wonderful progress along the line of coaxing the bees through the honey flow, without any loafing. (But that is another story, concerning which I hope to say something later.)

During recent years we have been unable to requeen systematically or to equalize the colonies previous to the honey flow, as was our previous practice. However, we now secure nearly the same degree of uniformity in the strength of colonies at the beginning of the honey flow as we did by the other more laborious method, and are doing it by the more logical method of removing the factors that cause the weaklings rather than curing the trouble by equalizing in the spring. We now sometimes think that the time is not far distant when beekeepers will be able to attain a uniformity in per-colony output approaching the long-dreamed-of goal of every colony yielding as much as the best ones.

There are certain critical periods in brood-rearing throughout the year during which any deficiency in the needs of the colonies may affect tremendously their future prosperity, or, perhaps, even be the cause of their death. At other times colonies may be short of stores, cramped for room, have inadequate protection against the cold and wind, or even be queenless for a considerable period of time without any real danger to their existence or prosperity. But during these critical periods any deficiency in the needs of the colony which affect brood-rearing adversely, is extremely dangerous. For instance, it is not dangerous to the existence of the colony to have no brood-rearing during a considerable period of time in July or early in August. If this occurs, however, during the latter part of August and early in September in the clover region, the colony is practically worthless for winter. This is one big reason for the great difference in the strength of colonies at the beginning of the honey flow. Only those colonies having no deficiencies in their needs during the various critical periods come up to the honey flow in prime condition.

These critical periods in colony existence and prosperity are so important that I think the bee journals should, each year, point them out, as they occur in the various parts of the country, for the benefit of those beekeepers who may not fully realize their importance.

## The Critical Period of August-September.

The beekeeper's calendar should begin in August. This is why I am writing

this now, for, in the clover region, the first of these critical periods comes some time in August and early September. At this time is laid the first course in the foundation for next year's honey crop, namely, the production of the bees that form the winter colony. The worker bees in our hives the fore part of August are not the ones that will form the winter cluster, for most of them will be dead before cold weather. If there is an absolute dearth of nectar, these workers may so save their energy that they will live several months, but they cannot, so far as we know, live through the winter. Therefore, if we are to have colonies composed of bees whose lives can span the broodless period of winter, they must be reared some time after the first of August.

When there is a dearth of nectar during this period (which is usually the case), brood-rearing is almost entirely suspended in colonies having old queens, even though they have an abundance of stores, as well as in colonies that do not have an abundance of stores, even though they may have young queens. With both young queens and an abundance of stores, however, a sufficient number of young bees are reared for winter even during a severe dearth of nectar. Queens reared in May or June are not nearly so active in egg-laying during the following August and early September as are those reared in August. If we could have our way about it, we would have our young queens begin to lay just in time to produce the workers for the winter colony or about the middle of August. The influence of an abundance of stores upon brood-rearing during a dearth of nectar is well known among beekeepers, yet probably



\*From *Gleanings in Bee Culture*.





Mr. Jas. Armstrong demonstrating the prevention and cure of American foul brood to a group of beekeepers.

no defect in beekeeping practice causes as much annual loss as that of taking the lion's share of the honey and leaving too little for the bees, thus compelling them to live from hand to mouth during the critical periods of brood-rearing.

Another condition, which is sometimes encountered, is that of just enough nectar available this month to tease the bees along and wear them out prematurely with scarcely enough brood-rearing to replace the wastage of bee life. Under such conditions the colonies grow weaker every day and begin the winter with small clusters. We know of no remedy for this condition except to move the yard to a location where it seldom occurs. An absolute dearth of nectar is preferable to this condition. A good fall flow, which enables the bees to store a surplus in August, puts the colonies in fine condition for winter as far as young bees are concerned. The very best wintering usually follows after an August honey flow. We envy those who are so favorably located as to have every year a good honey flow in August.

It is comforting to know that under any of these conditions the very best thing the beekeeper can do for the welfare of his colonies is to see this month that each colony has the following conditions existing: (1) A young and vigorous queen together with enough workers to be called a colony. (2) An abundance of stores far in excess of the immediate needs of the colony. (3) Room for both this excess of stores and brood-rearing. When these conditions are present during the four or five weeks following about the middle of August in our locality, we may confidently expect to have a colony in good condition for winter.

Much of the so-called winter losses are not winter losses at all but August-September losses. The fact, that colonies which were not supplied with the above three requirements during this critical period do not die until winter, can in no way justify calling it a winter loss. We do not expect to lose during winter colonies that were supplied with these requirements at the right time, and given half a chance to save their energy during the cold weather. In the clover region any deficiencies in these

requirements must be supplied in August.

Beekeepers who desire to have all

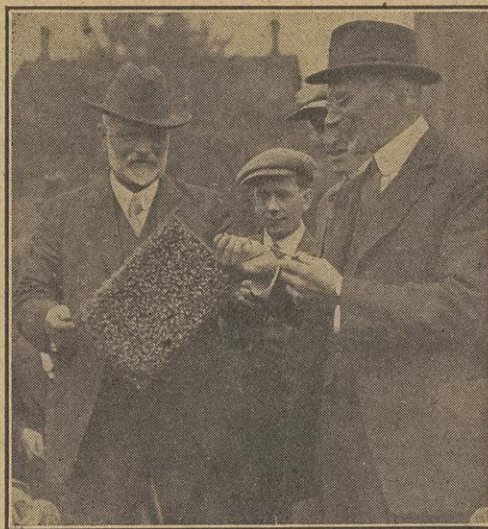
colonies do as well as the best next year must begin now. September is too late to retrieve a situation lost this month.

## How Far Bees Will Go for Honey

By L. B. Smith

**W**HAT distance will bees travel in search of honey? Amongst beekeepers there has always been considerable difference of opinion on that question, and in the August issue of the American Bee Journal Mr. L. B. Smith relates some interesting experiences in this connection. He says:

"In the spring of 1882 I purchased my first yellow-banded bees—Italians and Cyprians. People came for miles to see those bees, as they were quite a novelty then. At that time I lived in what was known as the 'cross timbers' of Johnson County. Not many bees



An Object Lesson.

Showing Mr. Chas. Kitchen handling and clipping queens in the Couse apiary. Mr. W. Couse is holding a frame of bees.

were kept, and my yellow bees were the first of that color that had been brought into the country. The location was a poor one; all other bees in the community were either black or brown in color, and were as much alike as two black-eyed peas, as the expression is sometimes used. But to get to my point, it was not infrequently that I saw those yellow bees of mine four and five miles out from home, busily engaged in gathering nectar from horse-mint, wild marigold and other plants in season. At that time I was a novice myself, and gave little thought to the subject, supposing that bees travelled that far or farther, if necessary. Some time later, however, from reading my beebooks and journals, I noticed that several authors stated that one and one-half to two miles was supposed to be the limit that bees travelled for stores. This set me to thinking, and to investigate further.

"In the spring of 1883, an old-time box-hive beekeeper came to my home and said: 'Smith, I want you to come down and help me to find a bee-tree.' He went ahead to say that some very beautiful yellow bees were working on the blossoms in his orchard. Being a great lover of such pastimes, I agreed upon a date to make the hunt. When the date arrived we met, fully prepared with our equipment to make the search. Sure enough, when we reached his home, there were the yellow bees on the blossoms in great numbers. We proceeded to catch and bait some of them. We soon had a line started that went directly toward my home. We baited and lined those bees for hours, until we had traced them to within a mile of my apiary. We were then convinced that they were my bees. By air line it was fully five miles from my yard to the home of my neighbor.

"The two years, 1886 and 1887, were extremely dry in Texas, being remembered by many people as extensive droughts. The first of these years was a total failure for bees; but the second was better. A few local showers of rain fell in different parts of the county. Some parts of the State had fair rains; but in my own immediate vicinity we had practically no rain. Some seven miles away from my home was the black land belt; in favorable years the horse-mint grew to perfection there. It was the chief dependency for a honey crop nearly all years. In this year, several local rains happened to fall there. There was a good bloom in a short time, and my Italian and Cyprian bees averaged a surplus of sixty-eight pounds of honey per colony. The distance from my apiary could not have been less than six or seven miles. While dealing with this point, let me quote a few lines written at that time for Gleanings in Bee Culture, for 1888, March issue, page 206. 'To further prove that they (bees) will go six or eight miles, I remember that this year (1887) has been noted for drought, and what rain came has only been partial showers. In June, when the mint blooms, everything here was burned up, but six or eight miles out on the prairie, there was plenty of rain in time to make the mint crop splendid; the result of it is, I got sixty-eight pounds of extracted honey to the colony.' Does this look to you, my reader, that bees fly not more than two miles for stores? Don't tell me that I was mistaken, and that the bees gathered this honey from some other source. I





Capturing a swarm in British Columbia. (Photo courtesy F. W. L. Sladen.)

was familiar with all the surrounding country for miles; furthermore, I am sure that this plant was not growing any nearer my apiary.

"At another time, in this same locality, I got a surplus of twenty pounds of comb honey to the hive from the wild marigold, when not a plant of it grew nearer than four miles of my apiary. That year the crop was plentiful about six miles away.

"Some three years ago, during the 'kinnikie' bloom—one of the sumac families—a friend of mine was attracted by the loud humming of bees passing over him. This man, Mr. D. H. Stribbling, is a beeman himself, and, being interested, he stopped to investigate. He soon discovered bees by thousands passing over him. From the direction they were coming, and from the color of several, he was persuaded that they were from my own apiary. At that time, he tells me, he was fully three miles from my home yard, and the bees had to go at least one mile further. My home apiary here in Llano County, is situated approximately two and one-half miles from any mesquite timber; yet during a fair blossom this apiary stores surplus honey from this tree about as fast as my outapiaries that are in the midst of the bloom.

"Now, in conclusion, it is unnecessary for me to take up more space. I am sure that bees do fly this far here in the South, and that they do gather surplus honey a great deal farther than two

and one-half miles from home. Instances are too numerous to the contrary; and too many have reached the same conclusion that I have. Now, gentle reader, understand that I have no long-distance or long-tongued bees for sale. I am merely interested in knowing more about the honeybee."

## QUESTION BOX

### Keeping Bees in Orchard.

I keep bees in my orchard, which is between my neighbor's house and my own. Can my neighbor make me keep the bees a certain distance from his house, it being on the line between us? Am wintering 60 swarms and the orchard is the only sheltered place I have.—F. T., Grenville Co., Ont.

There is no law to prevent you from keeping your bees in your orchard, nor are you required to keep them at a stated distance from your neighbor's premises.

1. Will a queen and bees covering one comb of brood build up strong enough to winter outside? 2. Is there a club of beekeepers who are sending for bees and queens? If so, how soon are they sending, and can I send with them?—H. B. McA.

**Answer:** 1. Yes, if started in June; but two or more combs of brood will be needed if started in July. 2. Write to the Secretary-Treasurer of the Ontario Beekeepers' Association, Parliament Buildings, Toronto, Ont., for the Association's 1918 list of queen breeders and shippers of pound packages.—F.W.L.S.

## Beekeeping a Branch of Farming

There is a point which the agriculturist or landowner may ask: "If the working of bees is so beneficial to my crops, and if such a large quantity of valuable matter may be taken, in addition to the ordinary crops, without impoverishing my land, why should I not take it instead of another person who has by right no interest in my crop or

my land?" The answer to this is obvious. It is open to the agriculturist to keep any number of bees he may think fit; he must only consider in how far it will pay him to add the care of an apiary to his other duties. No doubt every one farming land may with advantage keep a few stands of hives to supply his own wants in honey—the care of them will not take up too much of his time, or interfere much with his other labors; but if he starts a large apiary with the expectation that it shall pay for itself, he must either give up the greater portion of his own time to it or employ skilled labor for that special purpose; and he must recollect that the profits of beekeeping are not generally so large as to afford more than a fair remuneration for the capital, skill, and time required to be devoted to the pursuit. In any case, he cannot confine the bees to work exclusively on his own property, unless the latter is very extensive. When such is the case, he may find it greatly to his advantage to establish one or more apiaries to be worked under proper management, as a separate branch of his undertaking; but in every case, whether he may incur the risks of profit and loss in working an apiary or not, the thing itself can only be a source of advantage to his agricultural operations, and consequently if he does not occupy the ground in that way himself he should be glad to see it done by any other person.

The most badly diseased Italians I ever saw were some Goldenes owned by a friend of mine who drove me on an inspection trip among the beekeepers of his town. About two and a half miles from his apiary we found a yard of black bees, nearly all of which had some of these Goldenes mixed with them, and all were slightly diseased. Apparently these had been driven by stress of weather or attracted by the blacks to take shelter with them, and thus communicated the disease.—Chas. Stewart, Albany, N.Y.



A group of enthusiastic beekeepers taken in front of Mr. W. Couse's home at Streetsville, Ontario.



# Beekkeeping Very Profitable

Paper Read by W. H. Collins at Grand Forks Institute Meeting

**M**Y first start in beekeeping was in a village called Buckland, in Surrey, England. Residing with an uncle of mine, an old beekeeper, I became greatly interested in bees, watching my uncle work around them. On one fine May morning, about 10 o'clock, my uncle was surprised to see a second swarm alight in an elm tree, about 500 yards away, and about 25 feet from the ground. He said, "Herbert, you can have that swarm if you like to get them down." I said, "All right, I will get them down." So the first thing was to get a ladder long enough to reach the limb. This was secured and raised the limb. The next thing was my hive, or skip, as we used to call them in those days, and trim it. Securing my skip, I prepared the necessary dressing, which was made up as follows: A little beer and sugar mixed well, then the tops of broad beans were secured. These were dipped into the liquid, and the side of the hive was rubbed thoroughly. I next secured a veil and a pair of gloves. Everything ready, I started to mount the ladder. There were about fifteen lookers-on. I reached the limb where the bees hung. I rested for a minute or two, and once in a while I would look down and think of the distance I should fall if I should get stung and lose my grip, but keeping mind also what I was told before I mounted the ladder. "Keep cool, handle them carefully and they will never sting." Holding my straw skip in my left arm under the swarm, I took hold of the limb with my right hand, shook it and soon had my bees hived. Coming down the ladder I realized that the top of my straw hat was not bee-proof, as I had about two dozen bees crawling over my head and around my forehead, and to my surprise I did not get stung. I soon had the hive placed on a board under a bush beneath the tree, and left it there till night. Then I removed it to the stand where it was to stand. I had good success with it, and when the time came for a super I placed one on. The super was made of glass, and was in the shape of a bell. This was kept covered so it would be dark, but sometimes I would sit and watch the bees filling the super with honey, which would soon be taken away from them.

We never made a practice of peddling honey to stores, as the people used to come to the beekeepers for their supply. It was kept constantly on the table, and butter was hardly ever looked at by myself and others of the family, but only honey and bread.

Moving from England, I came to Canada, and resided in Southern Manitoba for about 18 years. I kept bees most of the time I was there. Bees proved to be profitable to me, and I could always sell what surplus honey I had extracted in the comb right at my door, always taking care that we had ample for our own table.

Moving from Manitoba, I came to Grand Forks, twelve years ago last October, bringing with me 32 colonies of bees. I have not done as well as I should have liked to do, but this is no fault of the bees, but rather because I have not had enough time to attend to them properly.

The best kind of bees to keep are the Italian, because they are more prolific than the black bee, gentle and less excitable, and therefore easier to handle. They are more industrious and they resist disease much better than the blacks. A colony of bees consists, normally, of one queen bee, the mother of the colony, from 10,000 to 50,000 or more workers, non-productive females, specialized for a life of labor, and in the summer a few hundred males or drones. The queen commences to lay on the first sign of spring, and it has

first part of June. I usually let each hive lay from two thousand to three thousand eggs a day. The larva or maggot hatches from the egg at the end of the third day. It is fed during the first three days on a milky food, rich in proteids, and then for two days on a mixture into which a considerable amount of honey enters. On the eighth day after the egg was laid the cell is capped over with wax. Within the capped cell, the larva throws off its last skin and becomes a pupa. This develops into the perfect bee, which emerges 21 days after the egg was laid. Twenty-four days are needed for the drones to pass through the same stages. The queen emerges from her cell, the larva throws off its last skin and from the time the egg is laid. The cells of a queen are different from those of the others and will be mostly seen along the bottom of the combs. They take the form of inverted cups. The work of preparing the food for the larva and of feeding them is carried out chiefly by the young bees. The honey is stored in the cells in the upper part of the combs and in the centre of the combs. In the cells in the middle and in the lower part of the interior are reared the developing bees. This region of the hive is called the brood nest. There is also a small quantity of comb consisting of the larger cells. In these the drones are reared. The drones are stingless and do not visit the flowers for honey, but they feed on the stores that are brought in by the workers. Their function is to fertilize the queen bees, for which purpose a few are needed, but after the bees' season is ended the workers soon put an end to the drones. The queen will live as long as five years, but it is best not to keep them after three years. The life of the working bee is from six weeks to two months in the busy season, but bees raised later in the summer will live to the following spring. A good strong colony will gather about one pound of honey a day in a good season, and it will take one pound of honey to make one pound of comb, so it pays to put in foundation combs in your frames. The hive that I use is the eight-frame Langstroth hive; some use the ten-frame.

Now, a few words on swarming. Most people do not let their bees swarm, but divide them; I follow the old principle, and let them swarm when they are ready. I generally have them ready by the latter part of May or the

first part of June. I usually let each hive swarm twice, and, if extra strong, three times. The second swarm will issue in eight or ten days after the first, and the third twelve or fifteen days after the first. The amount of honey to be taken from a hive depends upon the season, but you can figure on forty to eighty pounds.

A few words on wintering. I have tried several methods, and the best success I have had has been in the cellar. My cellar is gravelly—not too damp and not too dry. The temperature runs from 38 to 40 degrees. I keep them about one foot from the ground, and about 18 inches between the hives, and they are kept dark and as quiet as possible. The more they are disturbed the more stores they will do away with. I have wintered bees on ten to fifteen pounds of honey this way, and they have come out strong in the spring.

If bees alight on you, or one is flying towards you, never strike at them; they hardly ever sting unless they are pinched or struck at, and then they will protect themselves.

Bees looked after thoroughly soon get to know their master or masters, and then you can do anything you like with them.

Keep plenty of honey on your dining-room table if you want to be healthy, but be sure that it is pure.

## Toronto Beekeepers Meet

On July 27 the members and friends of the Toronto Beekeepers' Association held their annual summer meeting at the apiary of Mr. Chas. Kitchen, Thistletown. There was a goodly attendance of enthusiastic beekeepers from Toronto and the vicinity.

Mr. W. A. Weir gave a demonstration of Queen rearing, mating, and the Demaree system of swarm control.

Mr. Peter Temple, assisted by Mr. Kitchen, extracted about sixty pounds of very fine honey, after which Mr. Temple gave an excellent demonstration of the Deadman bottom board system of cleaning out newly extracted combs, thereby preventing robbing or spreading of disease.

Another very successful meeting of this Association was held on May 24 at the apiary of Mr. Wm. Couse, Streetsville. Illustrations of this gathering appear in this issue of the Beekeeper.



Mr. Wm. Couse handling Bees in his own apiary at a field meeting of the Toronto Beekeepers' Association on May 24.





Fireweed (*Epilobium angustifolium*), a valuable honey plant in the North.

## Preparing Bees for Winter

**I**N all parts of Canada there was a heavy loss of bees in the winter of 1917-18. Most of this loss was preventable. The increased value of honey urges us to make a special effort to prevent it this coming winter.

One of the principal causes of the loss was insufficient protection of the bees wintered outside. In no part of Canada should colonies be wintered outside without an outer case covering the hive and everywhere, except, perhaps, on Vancouver Island, this case should be large enough to allow for 3 to 6 inches of packing around the sides and beneath the hive, and 10 inches or more on top. It is advisable to have the case large enough to take 2 to 4 hives en bloc, and the entrances in it should be reduced to  $\frac{3}{8}$  of an inch wide by  $1\frac{1}{2}$  inches high, with no projecting ledge beneath to lodge snow or ice. It is important that the apiary should be sheltered on all sides from wind, say by an 8-foot board fence or evergreens.

In very cold districts or during an extra hard or long winter, the bees will winter better in a well-insulated and dry cellar than outside.

Another important cause of loss was unwholesome or insufficient stores. Honey-dew, fruit-juice, molasses and syrup made from low grade sugar, will kill the bees before spring. The most reliable stores for winter are well ripened clover honey, buckwheat honey, and syrup made from refined sugar. Some honeys gathered in the fall are unwholesome. Be sure that the stores are well ripened and capped over before cold weather, and that each colony has about 30 pounds.

The remaining causes of loss were weak colonies, queenlessness, too high a proportion of old bees to young bees due to old or drone-breeding queens, and the depredations of mice.

Weak colonies should be united and the hives packed in the wintering cases about the middle of September, and any feeding that is

found to be necessary should be completed before the end of September, except in Southern Ontario, when a week longer is allowable.

Owing to the shortage of sugar, some capped combs of the purest clover honey should, if possible, be reserved for wintering. Be sure that this has been gathered by bees free from foul brood. These combs should be left in the care of the bees until required.—Experimental Farms Note.

## The Prevention of Robbing

**D**URING the latter part of July or the beginning of August in most localities the honey flow comes to a stop and capped sections or frames filled with honey should be removed. The Porter bee escape board is one of the handiest of the numerous contrivances in use by bee-keepers and should be used even when only a couple of colonies are kept. The board is the size of the hive, with a hole in the middle into which is placed a tin bee escape. The escape is put beneath the supers containing the surplus honey. If there is no brood in the super the field bees will all be out inside of 24 hours, but if brood or eggs are there all the bees will not leave, some will remain to take care of the young bees. When the bee escape board is used it is very little trouble to take a super off. To have bees crawling all over everything and using smoke to clear the super is not pleasant. If you have a few colonies and can afford it by all means use a bee escape board for your own comfort.

When the flow ceases, if care is not taken, robbing is likely to break out. Strong colonies with plenty of stores will rob weaker ones, but if the robbing bees happen to attack a strong colony they are met by the guards and a tussle ensues when the attackers vainly endeavor to escape or crawl away minus a wing, leg or some of their hair. During the honey flow a queen that has been working hard laying eggs is likely to die, and the queenless colony is the one to receive first attention from the robbers. Bees that are out to rob make an angry hum that once discerned is never forgotten. They pry into every crack and hole around a hive instead of going in boldly at the entrance of a strong colony. Once, however, bees start robbing a weak colony, it is next to impossible to check them. The bees will go in and out at the entrance, fight the guards, if there are any left, and carry off the stolen sweets to their own hive. When a colony is doomed the bees within join the robbers and take up their quarters at their hive. When bees start robbing it is liable to cause a lot of trouble. Preserving or canning going on in the house may attract bees by the odor that permeates the air. If robbing is discovered in time it may be checked easily by contracting the entrance so that only one or two bees are allowed to pass, and by chinking cracks and places warped by the sun with mud or cloth so they are not able to enter these places.

The best way to be without robbing is not to let it get started. Don't leave any pieces of comb lying around the yard. Keep all jars or cans containing honey covered, so that bees cannot get inside. Keep all colonies strong with a young queen—robbers seem to know a queenless colony and get after that kind. Contract entrances of all weak colonies to one or two bee way. If buckwheat or fire weed yield a surplus, robbing will not usually occur until after these flowers cease yielding nectar.—Garden, Orchard and Farm.

## Advice for Beginners

Never stand in front of a hive when the little fellows are coming in loaded.

Keep the front of the hive clear; do not let grass grow in front.

Get your bees to swarm in May or the first part of June.

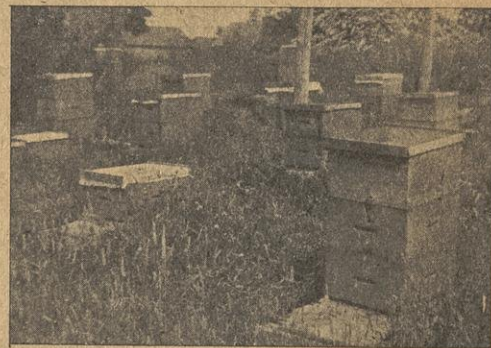
Bees dislike the offensive odor of a sweaty person or of animals.

Bees dislike any quick movement about their hives, especially any quick movement that jars their combs.

## Honey Bees and Fruit Trees

Are honey bees essential for a fruit crop? Some say yes, but an observant man writes: "It has been my contention for many years that honey bees are not essential to the fertilization of an apple crop. This year there has been an exceptional chance to test the matter. Weather conditions during the time the blossoms were open were ideal for pollenization. For about a week the sun was bright, the weather was warm, and there was little wind. I took time to stop in the orchards very often during that week and watched to see what insects were visiting the trees. On our place there were so few honey bees that I am sure I have seen less than 50 this year. Greening trees blossomed very full, most other varieties were full of bloom, and Baldwin had a moderate blossom, which was well distributed over most of the trees. Then when the time came when we could see how the fruit had set we found that Baldwin has set about as full as Greening, and that most other varieties are about the same. May 18, when the blossoms were just beginning to fall, I stopped in another orchard and noted the bee situation. There the honey bees were very numerous. There seemed to be several for each cluster of blossoms. June 9 this orchard was again visited, and it was found that the set of fruit was practically the same (less if anything) as in our orchards where honey bees did not work. If the question is, are honey bees necessary in an orchard? the answer must be, decidedly no. If we say bees, the answer is, probably, yes. In our case the bees that did the work are some or all of the many species commonly called "sweet bees."

In American Foul Brood, the bee larva or maggot, in the stage just after it is capped over with wax, becomes a viscid coffee-coloured mass which can be made to rope out an inch or more and has an unpleasant glue-pot odour. Cells containing the rotten larvae have their cappings discoloured, sunken, irregularly perforated or removed altogether. The remains dry to a scale which adheres tightly to the wall of the cell. This disease must be treated by shaking the bees into a clean hive containing frames fitted with narrow strips of foundation, and burning or boiling the combs, as explained in the Experimental Farms Bulletin No. 26 (Second Series), "Bees and How to Keep Them."



A corner of the apiary of W. G. Hornick, Flinton, Ontario.



# Inspection and Sale Act Amendments Approved

J. R. Hastings, Winona, Ont.\*

THE recent changes in the Inspection and Sale Act will bring about a greatly improved situation and result in much good to the fruit growing industry. The new regulations affecting fruit packages do not become operative until June of next year, after which time manufacturers will be required to make, and fruit growers to use, only such packages as shall conform in size, quality, etc., to the standard fixed by the amended Act. This will insure the uniformity in our fruit packages which has been sought for so many years by the leading growers and dealers in the Dominion.

The regulations affecting the marking of packages, shipping immature fruit, proper filling of packages, etc., are now in force. That they are a vast improvement over past methods of packing our basket fruits will soon be in evidence. Under these regulations the name and address of the responsible packer must appear on each package—or where a grower's fruit is shipped in the name of a company, association or dealer, a number in lieu of such packer's or grower's name and address may be used. In any event, the name and address of the responsible packer, or a number to be furnished by the company, association or dealer handling his fruit, must plainly appear on each package. The sizes of the letters to be used are designated in the regulations, a copy of which every fruit handler should have and may have by writing to the Dominion Fruit Division, Ottawa.

## An Important Regulation.

The marking of fruit packages is, in my judgment, the most important regulation that has been enacted. The little extra trouble and expense it entails upon the grower is negligible as compared with the benefits which are sure to follow a strict observance of this regulation. In the past it has been possible for the unscrupulous packer to take unfair advantage and occasionally get away with it, but now it will be difficult for him to do so and dangerous to make the attempt. It will now be possible for the Dominion fruit inspectors to readily establish the identity of a packer, no matter at what point in the Dominion his fruit may be found, and the fact that a stiff fine and imprisonment may follow certain violations, will do much to protect the unscrupulous man against his own folly and at the same time remove a menace to the fruit growing industry. There is not the slightest doubt but the shipping of immature, wormy, diseased and dishonestly packed fruits has done much to curtail fruit consumption.

It should be noted by dealers and shippers that they are also liable to a penalty for handling fruit, no matter who packed it, that is in violation of the regulations. Cases of violation by a grower or packer coming directly under the notice of a fruit dealer or fruit organization should be promptly reported to a Dominion fruit inspector, in order that it may be dealt with as the circumstances warrant.

It is, I believe, the purpose of the Fruit Division to give instructional assistance to growers whenever this seems necessary, and to prosecute all cases of inexcusable violation of the Fruit Act regulations.

The regulation affecting the careless handling and pilfering of fruit was a much-needed

one and should be strictly enforced. No matter how excellent a shipment might be when it leaves the shipper's hands, the stormy voyage it has to take before reaching its destination may land it in the retailers' hands in a deplorable condition and subject the shipper to unfair criticism and sometimes a penalty.

## Nova Scotia Growers Approve

Manning Ells, Secretary Nova Fruit Growers' Association, Port Williams, N.S.

THE amendments to the Fruit Marks Act as made by the last session of Parliament should please the fruit growers in Nova Scotia, as every change that was made has had the approval of their Fruit Growers' Association for some time. Their delegates at the fruit conference in Ottawa last March were able to obtain every essential point in their program, and the law as passed follows closely all the resolutions passed by the fruit conference.

Perhaps for Nova Scotia the most important point of the amended act is that relating to the size of the barrel. New markets never would accept the old Nova Scotia barrel except under protest; some markets would not take it at all, and wherever it came into competition with the larger Ontario or United States barrel, the buyer cut the price much more than the actual difference in the fruit contained warranted. The advantages of one standard barrel for the continent are so many and so great that I need say nothing more on the subject. Nova Scotia decidedly has nothing to complain of here.

The new Act has been brought more up-to-date in the matter of grading. Here quite striking changes have been made. The No. 2 definition is quite different from the old No. 2, but fully in accord with the methods of all

This sort of thing discourages the small dealer at distant points from handling fruit and tends to curtail consumption. It should be pointed out, however, that pilfering and rough handling are not altogether responsible for the ragged condition in which fruit packages reach the retailer, and the shipper should insist that baskets shall be more securely fastened. One fastener in each end of an 11-quart basket of cherries, black currants, etc., is not enough. I notice that the baskets with four, six, and in the case of some black currants, with as many as eight hooks, arrive in much better shape and meet with a better sale than baskets insecurely fastened.

good packers in Nova Scotia. The old Fruit Marks No. 2 was supposed to be a second grade cooking apple (as the No. 1 was supposed to be a high grade dessert apple), and took in what is now divided into the "No. 2" and "Domestic" grade. In practice, this old method did not give satisfaction, for the packers found that the small apples, if of good quality, brought fine prices when exported, while the large defective or slightly spotted apples, being poor keepers, were better handled in the local markets.

The law now recognizes these two grades, and we have in the new "Domestic" grade a much better apple than the old No. 3. The consumer who wants a good merchantable apple at a moderate price can buy this brand now with the assurance that he is getting just what he is paying for.

The No. 3 grade was included in the amended Act at the special request of the Nova Scotia growers. Formerly the No. 3 mark was much abused, and covered all the sins in the apple packers' decalogue. Inspectors could do nothing, as they had no definition to back them up. Now with culls defined, and properly packed, the No. 3 can hold up its head in the market that calls for that grade, for we know that there is a place for the small, well packed apple.

## The 1918 Apple Crop

F. H. Grindley, Dominion Fruit Division, Ottawa

A summary of apple prospects in Canada, and a comparison with the crop of 1917, shows a close similarity between the two, as far as the total yield and its ultimate distribution are concerned. The total available supply of apples in Canada will probably be appreciably less than a year ago. Nova Scotia will produce approximately 400,000 barrels of apples, according to present estimates, which is only 60 per cent. of last year's crop of 700,000 barrels. Ontario expects a slight increase over last year's production and British Columbia a slight decrease. Quebec will have an exceptionally light crop, particularly of fall and winter apples.

The British embargo on Canadian apples is still in effect, and there is practically no likelihood of its removal or modification this year. It will, therefore, be necessary for the Nova Scotia crop to move westward. We may take it for granted, though, that the experience of 1917 will serve as a guide and be of the greatest possible benefit to individual shippers and to distributing agents this year. The efforts which are now being made to encourage the consumption of fresh fruits and vegetables will ensure a steady demand; in fact, the demand will very likely be greater than the supply. No marketing difficulties are, therefore, to be expected.

So far as prices are concerned, it would be unwise to make any definite statement at this

date. According to the law of supply and demand, prices should rule high. But we have learned, since the outbreak of the war, not to anticipate results with the same certainty as formerly. If past experience teaches anything, some effort should be made to prevent the unwarranted advance in prices which characterized the commercial apple market a year ago. If that is done, prices need not be any higher than the comparatively light crop would justify.

## Items of Interest

The well-known nursery firm, Stone & Wellington, kept track of the expense last spring at their nurseries of setting out a large cherry orchard. As the cherry trees were to be set out twenty feet apart each way, the field was marked out with the plough in furrows twenty feet apart each way. A tree was planted at each intersection. The whole orchard was planted by an old man over 70 years of age, with the assistance of a boy in short pants who held the tree in place, while the old man did the planting. These two, without any other assistance, planted 200 trees a day. Stone & Wellington state that it costs no more to plant apple trees than cherry trees, and they estimate that the old man and the little boy would be able to plant from four to five acres of apple trees a day.

\*Mr. Hastings was the chairman for several years of a joint committee of fruit growers in Ontario representing different districts and associations that was appointed to secure greater uniformity in fruit packages. It was due largely to his efforts that the amendments in the Act relating to the size and dimensions of packages were secured.



# Make Handling Fruit and Vegetables Pay

W. A. McCubbin, Canadian Commissioner of War Emergency Board,  
St. Catharines, Ont.

**T**HE War Emergency Board of American Plant Pathologists is issuing from time to time helpful hints and suggestions, which have a bearing on the present urgent necessity for greater production and conservation of food materials. The following is a copy of a recent short article sent out by them, that has a bearing on Canadian conditions.

## Handling Perishables Should Pay.

Fruits and vegetables should return a profit to the grocer. The increase in operating expenses, with its inroads into the traditional twenty per cent. profit, makes it poor policy to handle fruit at cost for the sake of creating good will. Nor is it possible to assure a profit on this class of goods merely by raising prices, for these valuable and necessary articles of food are so generally regarded as luxuries that an increase in price may mean such a falling off in demand as to cause a glut. The grocer can, however, improve his handling methods, reduce the loss from decay, and thus increase his profits and render patriotic service by saving food.

## When Everyone Loses.

Fruit which rots on the grocers' hands is a dead loss all round. The grower gets less than he should for his crop, the consumer pays for part of the fruit that rots as well as for what he eats, and the dealer loses the profit he should have made.

Some vegetables deteriorate greatly in quality and still remain saleable; for example, sweet corn, green peas and asparagus. Fresh asparagus contains from 1½% to 2% sugar, along with other food materials. If, however, asparagus is kept in a warm place, the sugar rapidly disappears and the amount of cellulose, that is, wood fibre, increases. In other words, the longer you keep asparagus in a warm place, the less sugar you have and the more wood.

## Keep Them Moving.

Practically all fruits and vegetables deteriorate rapidly when held for display on store counters or in the windows. Some, such as strawberries and raspberries, will rot in a few days. Apples from storage will often scald and thus become hard to sell. All such goods should be moved as rapidly as possible. This means well timed purchases, attractive prices, in particular an opening price which is low enough to create a buying habit, and the display of sound, clean goods.

The success of the fruit stand in handling perishables is largely due to the fact that many grocers are content to have boxes of half spoiled fruit in front of a counter, while on the fruit stand there is always clean, sound fruit on the top of the pile. This phase of the retail business has been repeatedly emphasized by Mr. A. U. Chaney of the American Cranberry Exchange, who says, "Time and again have I noticed that a retailer who has unsound and unattractive fruit in his store has blocked his sale of cranberries." The same is equally true of peaches affected with brown rot, or of apples which show scald. A first-class grocery is not the place to exhibit diseased fruits; leave that to the experiment stations.

## Well Grown Fruits Keep Best.

In many cases the fungi which cause a decay of fruits gain entrance in the field, and they can be controlled by well known methods. Probably in no fruit tree is the annual loss in the retail store greater than that in the case of peaches. A very large part of this loss is due to the brown rot fungus, the methods of controlling which are well understood by plant pathologists. While, in the case of fruit ship-

ped long distances, it is now impracticable for the grower to know from what type of orchard his peaches come, the dealer who handles locally grown fruit may well insist on buying only that which has been thoroughly sprayed and thus avoid trouble for himself and help educate the grower. The same is equally true of apples, cherries, plums and other fruits. The plant pathologist and the grocer should work together towards a time when sprayed fruit will bring a premium over fruit of equally fine appearance which may contain the germs of decay-producing organisms.

## Keep Cool.

Perishable fruits and vegetables must be kept cool if they are to be kept at all. Professor Morse, of Amherst, has shown that bunches of asparagus kept in a warm room deteriorated more in one day than similar bunches in a refrigerator did in four days. The same is true of many other vegetables.

Probably no common fruit shows a greater percentage of loss than the strawberry. The United States annually produces over eighteen million dollars worth of strawberries. This is an important food crop. In addition to furnishing the only cheap fruit which is abundant early in the season, good strawberries contain from four to five per cent. of sugar and other food material. Strawberries are, however, short-lived and are readily attacked by black mold, which rapidly causes them to collapse and to lose their juice. This disease is well known to the trade and is aptly named "leak." This fungus destroys over five per cent. of all the strawberries grown in the United States, an annual tax on the American public of at least a million dollars. Careful study has shown that black mold will grow more in 36 hours at 91°F. than in three weeks at 50°. It has also been shown that strawberries placed in the sun absorb the sun's heat so as to become markedly warmer than the air. It is no exaggeration to say that the average box of strawberries will spoil more in half a day in the sun in front of a grocery store than it would in three days in the refrigerator or even near the meat room.

## Hands Off!

Trade experience and scientific investigations alike show that most fruits and vegetables are injured by handling. Tomatoes, peaches, cranberries and strawberries, among other things, spoil rapidly after being handled, especially in a warm room. What, then, must be the effect of critical pinching and squeezing by every housewife who is trying to decide between tomatoes at twelve cents a pound and string beans at thirteen? If the purchaser must have a sample, take one out and make her a present; do not return it to the pile. Let the rule there be "Hands Off!" and let the rule be made known by a neat sign plainly displayed.

## Let's Get Together.

In these times of food shortage and high prices, public attention is being called sharply to waste of all kinds. One source of waste is the decay of fruits and vegetables in the grocery store. This can and will be largely reduced. To this end the plant pathologists of the country are ready to place their knowledge of the diseases of field crops at the disposal of the grocer, only asking that the grocers will in return point out where the pathologists can do the most good. Write the pathologists of your state or provincial experiment station, or the U.S. or Dominion Departments of Agriculture; ask questions and make suggestions.

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## British Columbia

Chas. L. Shaw, Victoria, B.C.

**J. B. CASTNER**, for several years with the Okanagan United Growers, has been appointed fruit manager for the Penticton Fruitgrowers' Union. For several years Mr. Castner has been serving as fruit inspector, and his successor in that capacity is C. W. Little, of Enderby, at one time president of the Enderby Growers' Association, and also one of the provincial directors of the Okanagan United Growers. He has resigned both these positions to accept the salaried office in the central organization.

According to F. W. Peters, of the Canadian Pacific Railway, last year's Okanagan Valley fruit crop statistics showed that the output aggregated \$200 per capita of population. Unless weather conditions interfere, Mr. Peters looks for just as good a production this year.

Washington apples are expected to open in the prairie market with quotations from \$1 to \$1.25. It is being predicted that B.C. No. 1 Wagners, Romes and apples of that class will not open under \$1.80, and that McIntosh Reds will not be priced at less than \$2.25.

The recent embargo placed on American imports has added impetus to the market for British Columbia cucumbers, and the present hothouse supply is insufficient to supply the demand.

The general fruit situation in British Columbia is extremely promising and a crop equal or better than last year's is predicted. The May frosts did considerable damage in the interior, but not so much as was first believed. Some orchards suffered a 50 per cent. loss, but the new land coming into bearing will probably more than compensate for that.

The strawberry crop of the Gordon Head and Saanich districts this season was light, the harvest being less than two-thirds of the 1917 production, both in volume and value, and last year's showing was not any too satisfactory.

Seventy tons of jam berries were shipped, and 11,000 crates went out to the prairies. Three hundred and sixty-six crates were consumed in Vancouver and the remainder stayed on the island. The total value of the crop is estimated at \$13,000.

The Gordon Head Fruitgrowers' Association tried out the new type of brine tank car this year and found it wanting. The crop was shipped to the prairies in fifteen cars. One was a brine tank car, and the contents of that one car deteriorated to the extent of 65 cents per crate. The berries packed in the cars equipped with the Bohn refrigeration system were in excellent condition when they reached their destination, and E. R. Scott, president of the Scott Fruit Company, Calgary, wrote Secretary McNaughton, of the Gordon Head Fruitgrowers' Association, that he never saw shipments in better shape than those received from the two Vancouver Island districts this year.

Speaking of cars, there is a controversy

going on in the West as to the relative merits and demerits of the ventilated cars and the line cars. The ventilated cars are closed after loading and remain closed until reaching the prairie markets. A cool air draft is circulated through the car with intake at the top. It is claimed that small fruit shipments are often seriously damaged through this arrangement by the smoke, soot, cinders and dust that enter the intake. The line cars are used for north and south shipments. They are provided with ventilation vents at the ends, with outlets at the top, and they are said to be not subject to the smoke nuisance. If express messengers exercised more care in opening and closing the intakes and vents, it is believed that both types of cars would be more satisfactory. The Dominion Express Company will probably give both cars a thorough test this season to determine definitely which of the two is better suited for the trade.

### Annapolis Valley Notes

Eunice Buchanan.

**F**EW people believe that there will be more than 400,000 barrels in the valley this season. Others do not think that there will be 300,000. At present there is a

### BEE SUPPLIES OF EVERY DESCRIPTION

Root Goods made in Canada. Beeswax made into foundation. The highest price paid for beeswax. Get our Canadian price list.

**The Canadian Bee Supply and Honey Co., Ltd**  
73 JARVIS ST. - TORONTO, ONT.

### North Carolina Bred Italian Queens

of Dr. C. C. Miller's strain of pure three-band Italian bees, gentle and good honey gatherers. July 1st to Oct. 1st, untested, 85c each, \$9 per dozen; tested, \$1.25 each, \$14 per dozen; selected tested \$1.75 each. Safe arrival and satisfaction guaranteed.  
**L. PARKER, R. F. D. No. 22, BENSON, N.C.**

## Canadian Queens

Leather-colored 3-banded Italians

Untested, \$1.00 each. Tested \$1.75  
Breeding Queens, \$5.00 each.

Satisfaction Guaranteed.

**JOHN A. MCKINNON**

Canadian Queen Breeder,

ST. EUGENE, - - - ONTARIO.

## HONEY WANTED

When you are ready to sell your honey, send us a sample. We are always buyers.

**FLAVELLES LIMITED**

LINDSAY

Canada Food Board License No. 156.

ONT.



heavy drop of young apples. In the best cared for orchards the crop is light, with the exception of some varieties, while in uncared for orchards there is practically nothing. The markets will be relieved by the elimination of the competition of small growers. The crop

## WANTED—APPLES

1500 barrels large No. 3, Winters

500 barrels large No. 3, Falls

1000 barrels small No. 3, Winters

Variety of Winters, Ben Davis, or Baldwins

## FOR SALE

1000 New Apple Barrels, cheap

**HYSLOP & SONS**

Greenville - - - Ontario

Canada Food Board License No. 14-157

## Fruit Packages

Have you placed your order for them yet? The fruit season will soon be here when you will need them. In order to get highest prices in the best markets, you require the

**BEST STANDARD PACKAGES**

Secure these by ordering at once from

**The Hantsport Fruit Basket Co.,**  
LIMITED

Hantsport, : : : N.S.

will be owned by men who are financially better able to handle it. Judging by the prices and demand for everything else, apple prices ought to be equal or superior to any of late years, and growers are more optimistic.

The strawberry season was prolonged with showers. Prices received ranged between 45c to 14c per basket. Imported fruits, bananas, for instance, are double the price and scarce; 60c a dozen, where they used to be 30c. Oranges, 6c to 10c each. Grape-fruit, 12c to 18c each.

Many people lost bees during the winter. One prominent bee-keeper estimated the loss at 90%. The bees have not been inclined much to swarm so far. Zebra caterpillars have again appeared on the turnips.

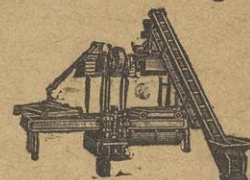
The deer are becoming numerous and destructive, and apparently know that they are protected. They come to eat the clover near where the men are working, and besides destroying crops, are summer pruning apple trees to a disastrous extent.

Our duty is plainly a matter of production to the limit with the means at hand because more and more of our able bodied men will be required of us to fill the gaps at the front. Medical science tells us that good bodily vigor is not possible without a fruit ration, and the apple is the king of all fruits. Are we doing our duty to the cause when we allow our orchards to get into such a condition that a decent crop of apples is well nigh impossible? This is not far fetched argument; it is based upon common evidence to be had in any section of Ontario. The spectacle of a good crop of clean apples on a few orchards, while the general average have practically nothing at all, has been only too common of late. In almost every case it is due to lack of care on the part of the grower.—Dr. J. A. Grant, Thedford, Ont.

## Don't Waste Apples

## GOOD CIDER

Will Make You Big Profits



Secure a "Mount Gilead" Cider or Grape Juice Press. Big money can be made by installing a Cider Press. Sizes—10 to 400 bbls. daily, hand or power.

Write for Catalogue

**The Brown, Boggs Co., Ltd.**  
Hamilton - - - Ontario

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

## FEED THE LAND

By using the best Manure and get

## GOOD CROPS

For Nurseries, Fruit Growers and Gardeners.

## Sure Growth Compost

(A Composition of all Natural Manures)

Makes poor land fertile and keeps fertile land most productive.

Special low prices for Summer Shipments, May 1st to September 1st.

Supplied by

**S. W. Marchment**

133 Victoria St., TORONTO

Telephones: Main 2841; Residence, Park. 951

Say you saw this ad. In The Canadian Horticulturist.



The Hand Scuffler in Use.

The hand scuffler is 9 inches by 3¼ inches; in the small one 6 inches by 2¼ inches. The handle is about five or six feet in length. PRICE—Direct to subscribers at 50c. for the small and 75c. for the large size. Express collect.

### Special Offer

One hand scuffler (as above)—(1) With one new yearly subscription to The Canadian Horticulturist, Fruit and Floral Editions only, for 75c. Express collect.

(2) With one new and one renewal subscription to The Canadian Horticulturist, Fruit and Floral Editions only, for \$1.00. Express collect.

**The Horticultural Publishing Co., Limited**  
Peterboro, Ontario

## The Handy Hand SCUFFLER

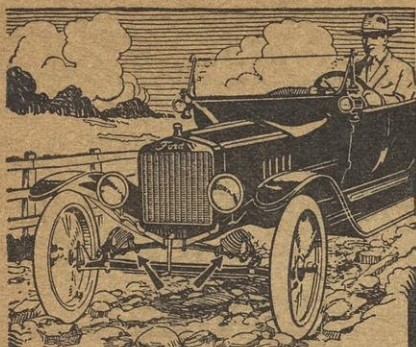
The Ideal Garden Weeder

THE handy hand scuffler is an ideal implement for garden weeding, and mulching. It is made of the best saw steel, and has four cutting edges, on both sides and ends. Lying flat on the ground, a slight pressure either in pushing or pulling only is required. It can be used endwise to chop tough roots. It is especially adapted for cleaning around bushes and plants.

Made in two sizes. The

blade on the large





## Don't Let Rough Roads Keep You from Riding

**I**T ISN'T NECESSARY. Hassler Shock Absorbers on your Ford will make "rough spots" feel almost as smooth as an even stretch of road. Their gentle, springy action absorbs every jolt and jar.



Hassler Shock Absorbers make your Ford ride as easily as a \$2,000 car. They increase tire mileage 20 to 100%, save gasoline, cut your up-keep bills one-third, and increase the resale value of your car. 300,000 Ford Owners recognize their economic necessity.

*You can't realize how much difference they make until you try them. That is why we want to give you the opportunity to see for yourself.*

### 10-Day Free Trial Offer

Phone, write or call for FREE TRIAL BLANK and we will have a set of Hasslers put on your Ford without a cent of expense to you. Try them 10 days. Then, if you are willing to do without them, they will be taken off without charge. Don't ride

without Hasslers simply because someone discourages you from trying them. Accept this offer and see for yourself. Over 300,000 sets in use. Do it now.

**ROBERT H. HASSLER, Limited**  
Lock Drawer H.C. 25 HAMILTON, ONT., CAN.



## APPLE BARRELS

We ship them all over Ontario.  
Machine-made, Standard size.  
Get our prices.

Contracts made with Fruit Associations.

**SARNIA BARREL WORKS,**  
Sarnia, Ontario.

# POULTRY YARD

## August in the Poultry Yard

March-hatched pullets should be laying eggs now.

Caponizing can be performed in August. Hens set this month should produce chicks that will make fine table poultry in February.

This is the scheduled molting month for young stock. Fowls that begin molting in August are pretty sure to be profitable winter birds.

August is one of the most trying months of the year for hens. They are often molting, and that of itself is a tough job for hot weather. It is a critical time with them, and they need a bit of help and sympathy. A good substantial ration will help them to get along with this sick spell more quickly and to feel better after it is over.

Get rid of all the surplus fowls. It is more profitable to dispose of them now at a good figure than to carry them through the molting season at a possible loss.

A good iron tonic in the drinking water is a good bracer at this time. Some rusty iron in the drinking water is an excellent substitute.

When broody hens occupy the nests for days at a time, lice increase rapidly, and the combined weight of other hens laying in the same nest is likely to break an egg, and the habit of egg eating is formed. Besides, eggs laid with the sitting hens are often not gathered until evening or perhaps the next day. This is one of the things that cause a poor quality of summer eggs.

It is cruel to punish the broody hen; she can not help her desire to sit. It is brought on through a long period of egg laying. Throwing her off the nest and other rough methods create apprehension among the rest of the hens, which hurts the egg yield. A roomy, airy coop is the surest and speediest cure for broodiness. A slatted coop permits a free circulation of air, helpful in the hen's fevered condition. Three days of confinement is sufficient in most cases.

## Breaking Up Broody Hens

Three things I wanted when I built my broody hen coop. I did not want to carry the hens any distance or have difficulty in getting them into the coop. I wanted them to be where other hens were busy eating and scratching around them to make them anxious to be doing the same, and I knew they would break up much easier if the bottom of the coop was open enough so the air could circulate up around them.

To get the nests and the coop handy to each other I set the coop up four feet from the ground, and built two tiers of nests underneath, which, with the one on the ground, made three tiers. Six inches below the lath bottom to the coop I placed a dropping board to keep the nests clean. To make it convenient to put the hens into the coop I had the door in the front opening in and hinged at the top. I simply pushed the hen through and the door dropped back shut and could not be pushed out from the inside. A simple wire hook held it open when I wanted to let the hens out.

As the coop was in the scratching shed, and the other hens were kept busy scratching there, the broody hens had plenty of company, doing away with the seclusion the setting hen likes. With bottom, sides,

and top all made of lath an inch apart there was no lack of fresh air, and no chance for making a warm nest, and no hen will set long unless she can have a warm nest under her.

Three days was the usual time it took my hens to get over their broodiness. Food and water were provided in vessels attached to the outside and reached through larger cracks, so it was never fouled. With nothing to do but eat, the hens forced themselves to get ready to lay again.—L. H. C.

## Poultry Diseases

At least fifty per cent. of the chickens, young ducks and turkeys, and ten per cent. of the adult birds, die each year from diseases, many of which are preventable. To stop this leak, every breeder should pay strict attention to the general conditions of his flock. When anything unusual is noted in a fowl, it is advisable to place the affected individual in separate quarters. If within a short time recovery does not take place, it is unwise to destroy the fowl without first ascertaining the cause of the disorder. The extreme importance of keeping the quarters clean, isolation of all ailing fowls and immediate action in regard to finding out the cause cannot be too strongly impressed upon the poultryman.

When trouble occurs, forward to the Biological Laboratory, Central Experimental Farm, Ottawa, Ont., a live but sick fowl, or, in the absence of such, a dead bird. In the interval disinfect the quarters, runs, drinking fountains and feed dishes to check the spread of any infectious disease. Disinfect the poultry houses by spraying the interior with a lime-wash solution (50 lbs. stone lime slaked in a barrel of water plus one gallon of a good commercial disinfectant). Fill cracks and crevices to destroy mites, lice, etc. If a smaller amount is required, it may be prepared by adding two and a half pounds of lime to a pail of water plus half a teacupful of disinfectant.

Keep a crop growing in some part of the yards and alternate poultry and crops. If the runs are small, cover with a coating of air-slaked lime and dig up. If the runs are too large to dig, plough and cultivate before sowing. Rape is a good crop for this purpose. Rear all chicks on fresh soil. Although these precautions may appear unnecessary, it is the only way of combatting many disease conditions affecting poultry, which if left to themselves, may prove decidedly costly in the long run.

## Market the Cockerels

Poultry keepers will find it more profitable to market young cockerels when they reach a weight of 2 lbs. rather than to feed the birds until late fall or early winter. Experiments show that at least 10 pounds of grain must be fed to produce a pound of gain and it is doubtful whether grain should be utilized for meat production through poultry.

On the average the feed necessary to grow birds to maturity will cost four cents a pound; thus unless the poultry producer has a special market for the heavier birds the price secured next fall may not pay for the feed given the fowls. Young cockerels marketed now as broilers generally bring an attractive price; then the flock may at once be fed with a view of developing winter-egg producers.

**When Writing Advertisers, Mention  
The Canadian Horticulturist**



## Inspection of Rejected Cars

In the past, losses and waste of fruit and vegetables have occurred by consignees refusing to accept cars, necessitating reconignment and probably a second rejection or a forced acceptance at a greatly reduced price. Some cars have been refused because of careless grading and loading; with others there was no reasonable excuse. The consignee reported to the shipper that the goods were unsound; the shipper either had to accept the advice and make allowance on the price, or hurry to

the scene for confirmation. Usually the markets are so far from the producing districts that the latter course is impracticable, and the marketing of these commodities, the very nature of which invites disputes, goes along with the shipper dependent almost entirely upon the honor of the consignee. Declining markets have sometimes been responsible for car refusal or invoice deductions, during the adjustment of which, deterioration of the shipment has been considerable.

To facilitate a prompt delivery, ensure fairness to both consignee and shipper, and to avoid unnecessary waste, the Fruit Commis-

sioner, Ottawa, upon request from either shipper or consignee, will have inspection of such cars made by a Dominion Government Inspector, and a copy of his report stating the condition of the goods, the condition of the car, will be forwarded to

The inspection service herein referred to is free, but at the present time can only be supplied at the larger marketing centres such as London, Toronto, Hamilton, Ottawa, Montreal, Quebec, St. John, N.B., Halifax, Winnipeg, Calgary and Vancouver. Application for inspection should be made direct to the Fruit Commissioner, Ottawa.



## IMPERIAL SERVICE

If you are in doubt about the proper lubricant, *ask the Imperial Oil man.* He will give you courteous attention and sound advice on your lubrication problems. That is part of Imperial Service.

## FARM MACHINERY AN ASSET ONLY WHEN IN USE

**Y**OU get no return from your investment when your farm machinery stands idle. Delays caused by broken parts or worn out bearings are costly. Many times these delays can be traced to improper lubrication. *Correct* lubrication is an important factor in keeping your machines in shape for full service.

You take no chances when depending on us for lubrication advice. We know and will recommend to you the correct Imperial Oil for every lubrication requirement. We can advise you and can supply the correct lubricant at our many stations all over Canada. There is one near you. Every Imperial lubricating oil is sold in steel barrels and half-barrels—convenient and economical. There's no waste. You use every drop you pay for. You are sure it is uniform and clean.

## A Correct Lubricant for every Farm Machine



For Gasoline Engines,  
Tractor, Auto or  
Stationary

**POLARINE OIL**  
**STANDARD GAS**  
**ENGINE OIL**

For Kerosene Engines,  
Tractor or Stationary

**POLARINE OIL**  
**HEAVY**  
**IMPERIAL KERO-**  
**SENE TRACTOR**  
**OIL**

(Recommended by Inter-  
national Harvester Co.)



For Open Bearings of  
Farm Machinery

**PRAIRIE**  
**HARVESTER OIL**

—very heavy body,  
resists cold, won't  
thin out with  
moisture

**ELDORADO**  
**CASTOR OIL**

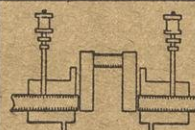
—a thick oil for worn  
and loose bearings



For Steam Cylinder  
Lubrication, whether  
Tractor or Station-  
ary Type

**CAPITOL**  
**CYLINDER OIL**

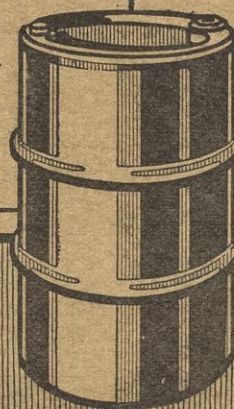
—the standard pro-  
duct for steam  
cylinder  
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**THRESHER**  
**HARD OIL**

For  
Grease  
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a clean  
solidi-  
fied oil  
high  
melting  
point



**IMPERIAL OIL**  
**LIMITED**  
**BRANCHES THROUGHOUT CANADA**



**The Fruit & Produce Market**

Commission firms undertook the marketing of fruit and general produce. They will be pleased to have orders for information, shipping stamps, etc., if you have fruit or vegetables for sale.

**STRONACH & SONS**

33 Church St., Toronto, Ont.

Wholesale Fruit, Produce and Commission Merchants.

Canada Food Board License Nos. 3-018, 3-019 and 7-005.

**H. J. ASH**

44-46 Church St. - Toronto, Ont.

CONSIGNMENTS OF FRUIT & VEGETABLES SOLICITED

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

**DAWSON - ELLIOTT CO.**

32 West Market St., Toronto, Ont.

Wholesale Fruit and Produce. Consignments Solicited.

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

**HERBERT PETERS**

88 Front St. E., Toronto, Ont.

See advertisement on page v.

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

**Niagara District Notes**

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

THE weather during the past month has been favorable. The latter part of June was colder than usual and caused the strawberry crop to ripen slowly, but this was an advantage to both growers and shippers, as it gave more time for picking and handling the crop, and rendered the fruit firm, so that there was but little waste. The same is true of the cherry crop. Although both strawberries and sweet cherries were a light crop, never has the fruit been finer nor more satisfactory to handle. The dry, cool weather prevented any rot and the fruit was in consequence of very high quality.

Prices for all small fruits have constituted a record. Strawberries ranged from 17 to 35 cents a box, and by the crate 18 to 22 cents were the ruling prices. Canners were buying freely in the open market, and paid as high as 25 cents per box.

Raspberries are on the market now. Early berries sold for 28 to 32 cents per box. A number of growers have contracted their raspberries for \$4.80 per crate, or 20c per box, so that the general public is not likely to get their supply much below \$6 per crate.

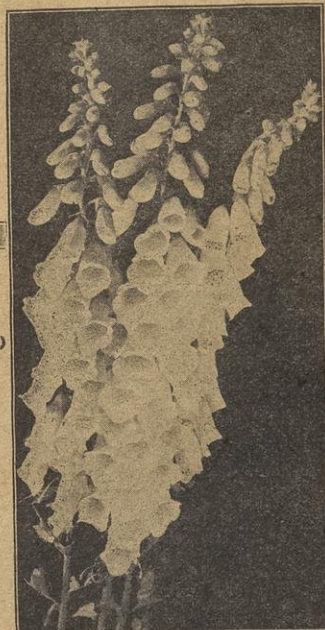
In the Winona district currants have been contracted at 14 cents a lb., and have been selling in the Toronto, Hamilton and St. Catharines markets at about \$1.25 per 6-quart basket, and \$2.50 to \$2.65 per 11-quart. Sweet cherries, both red and black, have been sold mostly in small baskets, and the price has varied from \$1.50 to over \$2.00, the latter price for blacks chiefly. In sour cherries, Early Richmonds were only a moderate crop. Montmorencies yielded better, however, and are a pretty good crop. Prices have run at 75c

to 90c for 6 quarts, and \$1.50 to \$1.60 for 11 quarts. Gooseberries are in excellent demand at from 65c to 90c per 6 quarts, and \$1.50 to \$2 for 11 quarts. Red currants have been in good demand at from \$1.25 to \$1.50 per 11-quart.

The plum crop is going to be a fairly good one, but outside of the Niagara District it is very light, so that prices are likely to rule high. Lombard, Gneii, Reine Claude, and Damsen are the best, but European plums are generally pretty good; Japanese are light, except Burbank. Contracts have been made at from 50c to 60c per basket all round, but I am of opinion that the general market will run above those prices.

Pears are light, except Bartletts and Keiflers. Peaches are not more than 30 per cent. of an average crop. Early peaches are the best, although there is a fair crop of later varieties on some orchards. A number of trees have been killed outright by the winter, and many others seriously damaged.

Grape vines were rather late coming into blossom, the cool weather having kept them back. Now, however, they are looking well, although some winter-killing has taken place. They do not appear, however, to be setting a heavy crop, and 75 per cent. of an average crop is considered to be about right.



## SOW PERENNIALS NOW FOR NEXT YEAR'S BLOOM

Perennials are now among our most popular flowers. They save labor and yearly planting, give better and earlier bloom and in greater variety than annuals. Perennial flowers are best for table decoration, as they keep fresh longer. In order to secure bloom next year it is necessary to sow them now. The following is a list of the most popular perennials we can recommend, together with prices:

**VARIETIES**  
Aquilegia Delphinium Canterbury Bells  
Forget-Me-Not Coreopsis Gaillardia Digitalis  
Hollyhocks Pansy Sweet William

Send your order now enclosing remittance by Postal or Money Order and we will promptly ship the seeds.

**GEO. KEITH & SONS**  
124 King St. E., Toronto, Ont.

**Prize List**

Now \$30,000.00

\$1,500 added this year, and the FRUIT and FLOWERS received their share.

A wonderful programme of star attractions given daily. Bands, pipers and a big Midway. Fireworks each night. Pure Food Show

**WESTERN FAIR**

LONDON CANADA

Sept. 6<sup>th</sup> to 14<sup>th</sup> 1918

N. B.—New automobile entrance cor. Dundas and Egerton Sts. Admission \$1, covers auto and driver, including parking of car.

Prize List, Entry Forms, Application for Space, and all information from the Secretary

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

A. M. Hunt, Secretary

Over Half a Century of Success



City and townspeople are grumbling a good deal at the high prices of fruit, but considering the high prices the fruit growers have to pay for their labor and supplies of all kinds, if fruit prices were not high, they would simply have to go out of business. The light crop is also a strong factor, as well as the fact that the canning factories are absolutely bare of supplies, and therefore are out for all they can get.

There are not many National Service girls employed in this neighborhood by fruit growers, although E. D. Smith & Son employed about 90 of them in the factory for handling the strawberry crop. In the neighboring county of Lincoln, however, a number of National Service girls have been employed and have given good satisfaction.

Several tractors are being used by fruit-growers and they have been a great assistance, doing good work in the way of cultivation and saving a lot of men. Without their help, some of the large growers here would have been hard put to it to keep their orchards well tilled. As it is, they look better than ever before. The makes used have been Ford and Cleveland. The latter has a more powerful engine and seems to do the best work, but it is more expensive than the Ford.

A report from Grimsby says that the Early Richmond crop there is excellent and the quality unexcelled. The outlook for the Montmorency crop is also very good. Some fine samples of gooseberries are now being marketed, and growers are getting big prices for this fruit.

### Cause of Winter Killing

An unusual feature of the winter killing of so many trees last winter is the fact that many of them were frozen above the collar of the root, just out of the ground, in a belt two to four inches wide. Many trees were injured to such an extent that they were lost, while others are about half gone. Mr. A. W. Peart, of Burlington, while speaking to an editor of The Canadian Horticulturist about conditions in that district, stated that this form of injury was very prevalent.

Mr. Peart, during his long experience, had never heard of trees being injured in this manner before. He advanced the suggestion that the reason the trees were injured in this spot might have been due to the fact that the grass protecting the trees in this place had made them more tender, with the result that with such severe weather as was experienced last winter, the trees were injured at this point.

We have no such valuable paper in England as the fruit edition of The Canadian Horticulturist. I always look forward to receiving it, and as an old subscriber, learn much from its columns.—E. F. Newling, Beckenham, Kent, England.

I always find The Canadian Horticulturist a help to me and look forward to receiving it each month, as I have quite a large orchard and keep a few chickens.—Jas. A. Meeks, Stratford, Ont.

### Grow Your Own Seed

While rigid selection from year to year is necessary for most kinds of vegetables when grown for seed; and while to keep them pure the different varieties have to be grown some distance apart, yet most of the seed grown in the home garden is likely to give almost or quite as satisfactory results, or even better, than that which is bought, and, as some seed may be difficult to obtain next year, it is recommended for each person who has a garden to let a few plants or specimens ripen, from which seed can be saved.

It is better to mark the best plants and save the seed from them, rather than to save



### "Daisy" Apple Press

The "Daisy" Apple Press is one of the best-known articles of this line, and is indispensable to every packer. In fact, it is used by the leading apple packers in Canada, United States and England.

Fruit growers' supplies carried—Ladders, Baskets, Felt Pads, Racks, etc.  
Write for Prices. Special Quotations to Associations

**J. J. ROBLIN & SON**  
BRIGHTON ONTARIO

### "Daisy" Apple Sorting Table

The "Daisy" Apple Sorting Table is one of the most useful articles in our outfits for fruit growers. It folds into small compass and can be placed anywhere in the orchard. It is light, but is strongly built to withstand rough usage. The table frame is of oak and all metal parts are of first class malleable. The cover is of No. 10 canvas.



### DOUGLAS GARDENS

#### Catalogue for 1918

Contains a complete list of a number of new plants that will interest customers this season.

A fine assortment of Paeonies. Perennial plants of all kinds. Shrubs and roses.

#### BEDDING PLANTS

Standard Fuchsias from 2 to 3 feet. Carnations of the finest varieties. Heliotrope, Cowslips, Salvia, Salpiglossis, Snapdragons, Pentstemon, Lobelias, Pansies, Ageratum, Verbenas, Asters and Stocks.

**ERICK ERICKSON**  
OAKVILLE - ONTARIO

### Northern Ontario

A vast new land of promise and freedom now open for settlement at 50c an acre in some districts—in others, Free.

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

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

**H. A. MACDONELL,**  
Director of Colonization,  
Parliament Bldgs., TORONTO, CAN.

**G. H. FERGUSON,**  
Minister of Lands, Forests and Mines.

### CANADIAN NATIONAL

## EXHIBITION

TORONTO, AUG. 26—SEPT. 7.

THE LARGEST PRIZE LIST EVER OFFERED FOR

**Vegetables, Fruit, Horses, Cattle, Sheep, Swine, Poultry.**

New and Better Classifications in All Departments. A win at Toronto places you in the front rank and brings many buyers.


WRITE NOW FOR PRIZE LIST TO

**JOHN G. KENT, General Manager, - 36 KING STREET EAST.**

Fabulous  
Prices are  
Being Paid  
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the seed which remain after the plants have been cropped.

The following minimum number of feet, plants or specimens to be saved is suggested as being sufficient to supply enough seed for the home garden in 1919: beans, 5 ft.; corn, 1 ear; cucumbers, 1; lettuce, 3 plants; melons, 1; peas, 5 ft.; radishes, 3 plants; spinach, 3 plants; squash, 1; tomatoes, 3.

Either reserve a few feet of the row of beans, or, better still, mark a few productive plants free from disease.

The seed stalks of lettuce are thrown up after the heads are full grown. The seed ripens rather unevenly, and, in order not to lose any of it, each head should be picked over as it shows white, it being necessary to go over the plants every few days. The plants can, however, be pulled and hung up to dry.

If some radishes are left unpulled, after being ready for use, they will soon throw up stalks, and good seed will develop. For best results the plants should be at least six inches apart.

Spinach, if thinned to six inches, will produce an abundance of seed.

In saving home-grown seeds, it is important to dry them as soon as possible after they are ripe, then clean them, and keep them dry until needed the following spring.

Peas and beans will soon be spoiled for seed if they do not dry rapidly in the pod after being harvested.

As corn sometimes has to be pulled before it is quite hard, it is desirable to see that there is a good circulation of air around each ear. A good plan is to husk the ears and then stick each one separately on nails driven into a board and far enough apart so that the ears will not touch.

The seed of tomatoes for home use should be saved from the plant bearing the largest crop of early and best fruit. Where a quantity of seed is saved, the tomatoes may be cut in half and the pulp pressed out into some vessel, adding about one-third its volume of water. Put in a dark room until fermentation sets in, which will be in about two days, when the seed will separate readily from the pulp. Wash out and dry where the sun does not shine on it.

Following are the quantities of seed which one might expect: beans, 1 or more oz. per plant; corn, 300 to 600 kernels per ear; cucumbers,  $\frac{1}{8}$  to  $\frac{1}{4}$  oz. per specimen; lettuce,  $\frac{1}{4}$  oz. per plant; muskmelon, 1 to  $1\frac{1}{2}$  oz. per specimen; onion,  $\frac{1}{2}$  oz. per plant; pea, 4 oz. per 3 ft. or row; pepper,  $1/16$  to  $\frac{1}{8}$  oz. per specimen; radish, 1 oz. per plant; spinach,  $1\frac{1}{4}$  oz. per plant; squash, small seeded,  $2\frac{1}{2}$  oz. each; squash, large seeded, 3 oz. each; tomato, 50 to 300 each; watermelon, 2 to 3 oz. each.

## Books and Bulletins

During the past few weeks a number of interesting books and bulletins dealing with horticultural subjects have reached The Canadian Horticulturist. One of the most interesting and useful of these is a book entitled, *Injurious Insects and Useful Birds*, by F. L. Washburn, M.A., formerly Minnesota State Entomologist. It is one of the well-known series of books entitled Lippincott's Farm Manuals. The book is the result of twenty-one years of experience in economic entomology, and is intended for the gardener, the orchardist and the nurseryman, as well as for



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

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References: The Canadian Bank of Commerce (Market Branch) and Commercial Agencies.



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the farmer. It deals with insect pests affecting the apple, pear, plum, peach, cherry, grapes, berries and other fruits. The insects are fully described, their habits given and methods of control applicable to each advised. The book contains almost 450 pages, is well printed and contains over 400 illustrations. It may be purchased through The Canadian Horticulturist for \$2.00 a copy.

## Death of "Dan" Johnston

Just as The Canadian Horticulturist was going to press, word was received of the death of Dominion Fruit Commissioner, D. Johnston. His sickness is announced elsewhere in this issue.

Mr. Johnston left his office in Ottawa in May last to seek rest and improve his health on his farm. He was suffering at that time from stomach trouble and rheumatism. Reports indicated a slow improvement, but apparently his heart could not stand the strain and he died very suddenly and quite unexpectedly on August 4th at Forest. His age was forty-two.

Following the death of the late Alex.



The Late "Dan" Johnston.

McNeil, who was Chief of the Fruit Division under Dairy Commissioner Ruddick, the Fruit and Dairy Divisions were divided and Mr. Johnston was appointed first Dominion Fruit Commissioner. He was a practical fruit grower and an enthusiast in the co-operative movement. He was past-president of The Ontario Co-operative Apple Growers' Association, and has made a great success as Dominion Fruit Commissioner, holding the confidence of the fruit growers from the Atlantic to the Pacific. The recent amendment to the Inspection and Sales Act at the recent Session of Parliament were the result of several years work on Mr. Johnston's part. In the death of Mr. Johnston the Canadian Fruit Industry has lost one of its best friends and strongest supporters. He leaves to mourn his loss a host of friends throughout the country.

The Proceedings of The Entomological Society of Nova Scotia is a comprehensive report. It is somewhat technical, but well illustrated and valuable. Copies may be had from the Nova Scotia Department of Agriculture, as well as of a pamphlet entitled, Two

Important Vegetable Pests. This is circular No. 26, by W. H. Britton. The two pests dealt with are the Potato Stem Borer and the Zebra Caterpillar. This latter insect has been attacking fields of turnips, potatoes, beets, beans, and even apple and other plants. Remedies for both are given.

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15

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

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**NEW CAPPING MELTER FOR SALE**—Exchange for wax press or bees. Henry Twigg, Campbellford, Ontario.

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Hardy and adapted for Canadian climate.

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**Fruit Grading and Sizing**

Mr. P. J. Carey, Chief Dominion Fruit Inspector, Toronto, in his address before the Niagara Peninsula Fruit Growers, stated: "Too much emphasis cannot be placed on the need for grading peaches. The placing of fruit of different qualities and sizes in the same basket is now out of date as a practice by the best growers in every peach growing country. Such a pack does not please any trade. The high-class trade is ready to pay a high-class price. It has no place for the lower grades, and often will go without rather than take mixed packs. The packing, too, can be done with much more ease when fruit is sized. It is impossible to make a good smooth job of packing fruits of different sizes in the same basket. There is a danger, too, when all sizes are present, of the packer putting the larger fruit on the top of the basket, and then, of course, getting into trouble with the inspectors. I look upon the grading of basket fruits as one of, if not the most, advanced steps in fruit culture."

The best means of getting an even size of fruit is with a mechanical grader, and the simplest and most efficient one, and the only machine that is suitable for apples and peaches, and the only one that will handle tender fruit without bruising, is the Gifford Fruit Sizing Machine, manufactured by The Gifford Manfg. Co., of Parker, N. Y., and distributed in Canada by a prominent fruit grower, Mr. R. J. Lowrey, of St. Davids, Ont.

Letters from three prominent growers give their opinion of this machine in use on peaches and pears last season. One grower paid for

his machine in two weeks in labor alone saved. To another it meant whether he got his crop off or not. The Gifford Machine enabled him to double his capacity, and thereby saved him the crop of peaches.

Mr. Lowrey last fall met with splendid success among the apple men in the Annapolis Valley, N. S. This machine filled a long-felt want, and very many of the fruit warehouses there are now equipped with a Gifford Fruit Sizing Machine.

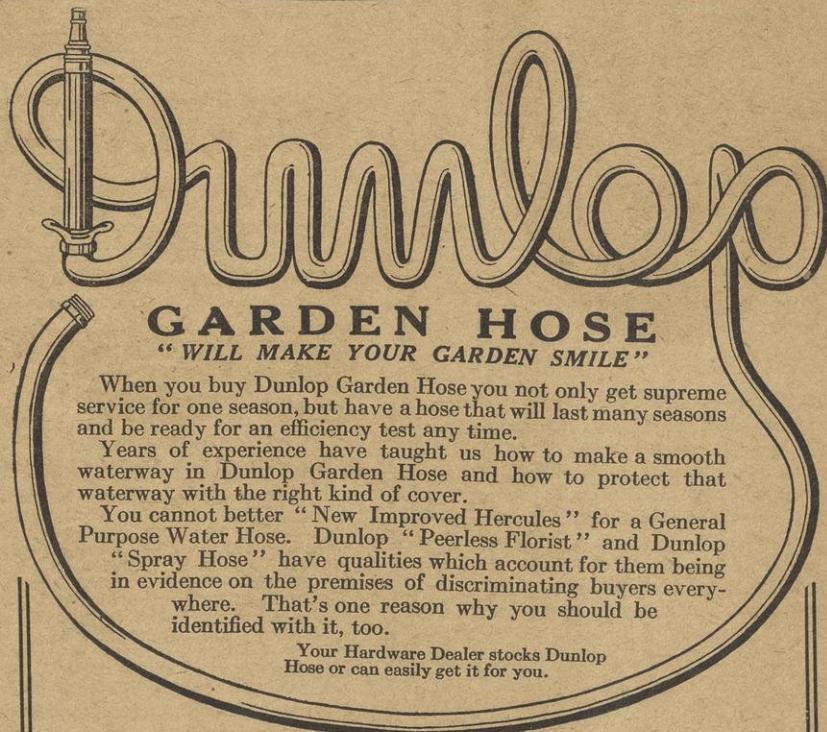
I purchased a Gifford Fruit Grader last season and used it on peaches and pears. I found it entirely satisfactory and a means of obtaining increased prices and securing an even grade of fruit.—A. Onslow, Addison Fruit Farm, Niagara-on-the-Lake, Ont.

The Gifford Fruit Grader I purchased last year for sizing peaches not only did the work perfectly, but saved the labor of at least six women.—C. Howard Fisher, Dulverton Fruit Farm, Queenston, Ont.

The Gifford Fruit Sizing Machine which I purchased last season did the work expected without bruising the fruit in the least. It runs very smoothly and is a great labor saver. I would not attempt to handle any quantity of fruit without one.—H. M. Woodruff, St. Davids, Ont.

As over two and a half million dollars' worth of fruit have been imported into Canada from the United States each year, the embargo just passed by the Government on the importation of such fruits as cherries, peaches, raspberries, gooseberries and strawberries is likely to prove of great importance to fruit growers, and should lead to large plantings of these fruits if the Canadian demand is to be supplied.

The large destruction of fruit trees in Ontario caused by the severe weather last winter, together with other factors that have been affecting the production of fruit in Ontario, is likely to mean that the man with a productive apple orchard of good varieties should make more money out of his holdings in the next few years than he has ever made before.



When you buy Dunlop Garden Hose you not only get supreme service for one season, but have a hose that will last many seasons and be ready for an efficiency test any time.

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You cannot better "New Improved Hercules" for a General Purpose Water Hose. Dunlop "Peerless Florist" and Dunlop "Spray Hose" have qualities which account for them being in evidence on the premises of discriminating buyers everywhere. That's one reason why you should be identified with it, too.

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It is a mistaken idea that a truck is useful only for driving upon paved roads. The Ford can be driven all over the farm, and used for hauling grain, potatoes, fruit, roots, fertilizer, wood, stock, milk or any other product. The speed it travels, the time it saves, and its low upkeep cost appeal very strongly to all users of the Ford Truck. If you need help, order your Ford One Ton Truck today.

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Round Hill, N.S., July 6, 1918.

Dear Sir,—You will be interested to hear the results we obtained with the Gifford Fruit Grader purchased from you late last fall. We may say that it gave entire satisfaction, that it has successfully graded the different varieties of apples, and that although purchased from you late in the fall, it reduced the cost of packing more than enough to pay for the machine.

Yours faithfully,  
**ROUND HILL FRUIT CO.**

**MAPLE LEAF FRUIT COMPANY, LIMITED**  
Growers and Packers of High Grade Fruit

Canning, N.S., July 8, 1918.

Dear Sir,—Replying to your inquiry, we are glad to endorse the Gifford Fruit Sizer bought by us last fall. The machine did good work for us in packing apples, made an even pack than could have been obtained by hand and we would recommend this machine to all who have use for a grader.

Yours truly,  
**THE MAPLE LEAF FRUIT CO., Limited.**

St. Davids, Ont., July 3, 1918.

Dear Sir,—Replying to your favor re Gifford Grader, I am pleased to say it did all you claimed for it, without bruising the fruit in the least. It runs very easily and smoothly, is a great labor saver, which means very much just now. I would not attempt to handle any quantity of fruit without one.

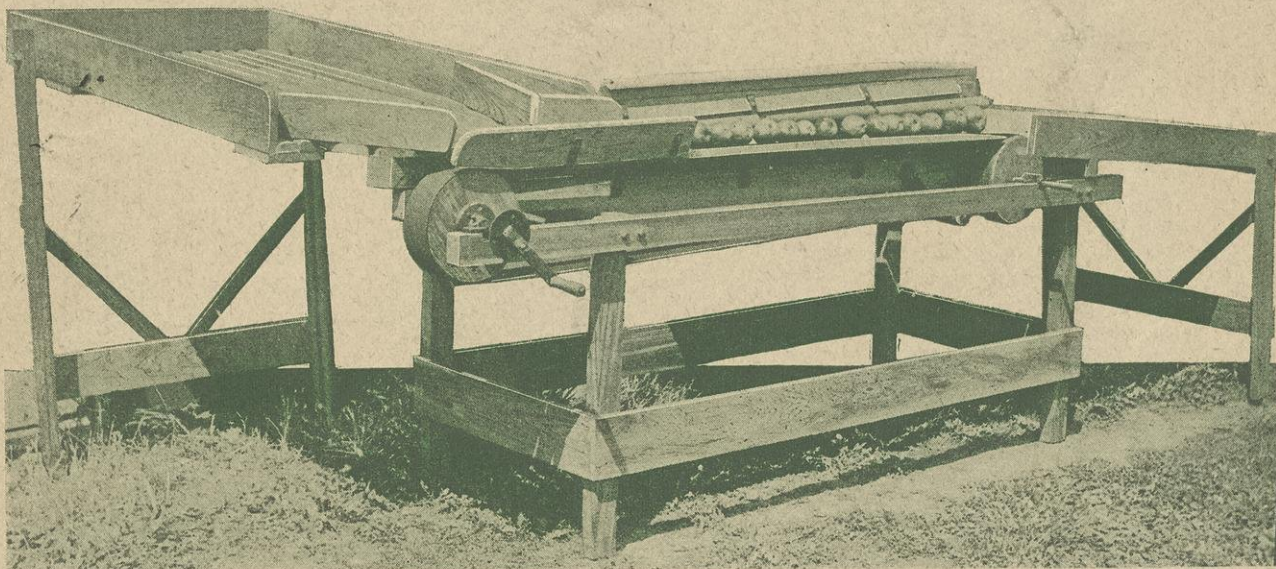
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