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THE
CANADIAN HORTICULTURIST &

BEEKEEPER

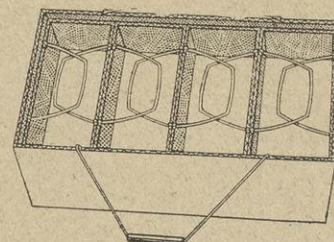
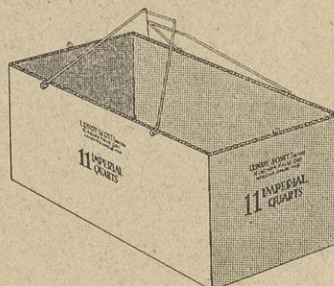
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The Canadian Horticulturist

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(See Pages 275-279)

(See Pages 275-279)

Vol. 26.

TORONTO, DECEMBER, 1918

No. 12

Future Prospects of the Fruit Industry

NOW that the great World War in Europe has ceased and that peace is in sight, with its prospect of a reasonably-early return to normal of the trade conditions that have been so seriously upset during the past four years, many fruit growers naturally are asking, What are the prospects for the fruit industry? Desiring to gather the views of those who should be in a position to discuss this matter, THE CANADIAN HORTICULTURIST wrote recently to a number of men well known to Canadian fruit growers, and asked them for expressions of opinion. Some interesting replies have been received. Not all of these can be published in this issue. Some are here given, and the balance will appear in our January issue.

Mr. Macoun's Views

Mr. W. T. Macoun, Dominion Horticulturist, Ottawa, writes as follows:

"While the apple orchard on the mixed farm has been neglected to some extent during the war, the fruit plantations in the fruit districts, where most or all of the revenue comes from fruit, have been kept in fair condition on the whole. The apple orchards which have been neglected have not yet suffered serious permanent injury from this neglect as, providing apple trees are sound, they can be re-invigorated by cultivation, pruning, spraying and fertilizing, so that in two or three years they should be in good condition again. There was, of course, great loss among apple trees of bearing age in the Province of Ontario as the result of the severe weather last winter, and peaches also suffered to some extent. Only statistics will show just how great the losses have been. While this loss may lessen the crop somewhat for a time, there are so many fine young orchards coming into bearing in Ontario that with good care there will still be an abundance of good fruit.

"What markets there will be for Canadian apples in the future can only be determined later on, but with the uncertainty of good fruit crops in Great Britain and the great demand for Canadian fruit, there and with the constantly increasing home market, which there promises to be in the future, the apple should continue to be the most important fruit crop."

"The tender fruits such as peaches and grapes should continue to be profitable to the growers of them, as the districts in which they can be grown cheapest and most successfully are limited and the demand will grow with the population.

"Small fruits can be grown successfully over a wide area, and we should

fruit growing is looked upon by many who have not had experience in growing fruits as one where good profits can be obtained without very hard work, we should expect that there will be much interest in fruit growing shown by many people during the next year, without any special effort being made to interest them."

An Optimistic View

A well-known fruit grower of Grimsby, Ont., who asked that his name should not be used, wrote as follows:

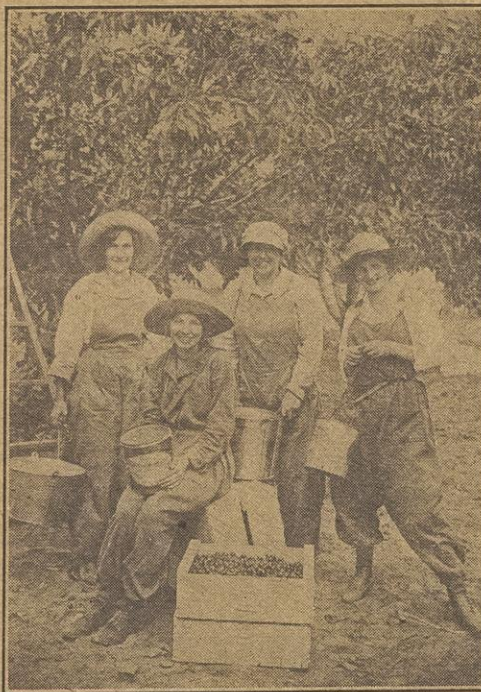
"Less than a decade ago, a large number of fruit growers, when you met them, would, in a sad pessimistic tone, and with direful shaking of the head, ask, 'What are we going to do with our fruit, when all the trees that are being planted come into bearing?' Methinks I can hear them yet!

"The question has been answered to the satisfaction, or rather dissatisfaction, of everyone; by the loss of probably 40% of the trees planted during the last decade. The factors contributory to this were, to a great extent—First, the war. The country was so depleted of men that a vast acreage of orchards, as a result of labor shortage, had to be neglected, as to cultivation, pruning, spraying, etc. This naturally left them in a weakened condition, and more susceptible to the second factor, viz., the severe winter of 1917 and 1918, which completed the disaster, with a possible loss of the percentage I have stated.

"What is the remedy? Carry on! Plant more trees, and then more! What will we plant? Whatever your soil and climatic conditions will produce the best. Grow that.

"I am of the opinion that there is no variety of fruit at the present time that can be overplanted. Our country is bound to go ahead. Our population will increase; market conditions will become righted.

"The labor situation will improve. Transportation facilities should be greatly enhanced, which together with co-operative marketing should assure the future of our industry. Let us banish from our minds all forms of pessimism. Go forward without fear of the future, and all will be well. Have



Cherry pickers in the orchard of Mrs. Porley, near Kelowna, B.C. Two are National Service girls sent out from Vancouver. The others are local women.

expect many more persons to take up the growing of small fruits in the future than there have been in the past. There are great opportunities near the cities and towns all over Canada for the production of small fruits to supply the local demand, and we believe that a combination fruit and vegetable business near the cities and towns where, in addition to small fruits, a limited number of apple and plum trees would be grown for selling the fruit in baskets offers good opportunities and promises fair returns.

"The fruit industry will be assisted best by greater co-operation among the growers and this will come about as the necessity for greater average returns is pressed home on the fruit grower. As

faith in yourself. Have faith in your business. Have faith in your country."

Nova Scotia Conditions

Supt. W. S. Blair, of the Kentsville, Nova Scotia, Experimental Station, writes: "There has been no appreciable decrease in orchard areas in Nova Scotia. Very little planting, however, has been done since the war started. The small fruit areas are not as large as formerly and have decreased about 25 per cent. This decrease is confined to strawberries.

"Apples are, of course, the most profitable fruit in Nova Scotia. Owing to black knot, plums have not been a very satisfactory fruit to plant. It would seem that conditions are ideal for the black knot and many profitable plum areas have been destroyed by it. There is a good opening for increasing the planting of this fruit, we think, with profitable results. For some reason the pear crop has been light for several years and little profit has resulted. It would seem that there is ample opportunity for some investigational work to find out why the pear crop is so uncertain.

"Interest in fruit growing centres around the apple. There is still the lively interest in this crop as formerly and without a doubt every fruit grower will plan to give his orchard the attention it requires. My opinion is that the development of regular monthly meetings in the rural districts is of prime importance, the organizing for these to be carried on by the District Representative. There are a few District Representatives in Nova Scotia, but there should be one in each county. The rural districts are favorably disposed toward such meetings, but they require some direction and organized effort on the part of some one to make them a success. The people of the community should, through some organization amongst themselves, be responsible for the carrying on of such work. A series of subjects should be outlined and one subject only allowed for an evening, and only one outside speaker, thus giving time for free discussion by the people in attendance, and also an opportunity for social intercourse. An effort such as this is essential if the best general management of our orchards is to be hoped for. The rural communities are looking for some one to direct their thought and energies along absolutely right lines. Have we the information and the men to do this? Agricultural organizations can be of little value until they are directed into activity for a definite object. Throw upon the organizations, whatever they may be, some definite educational responsibility and see how quickly they will revive. Bring back the old Grange day, devoid of its commercialism, and you bring to our rural districts a new life.

Let the motto be, 'The Betterment of the Community in which we live.' Without more activity in the organization of rural districts for agricultural

education the larger organizations cannot become effective and much of the work being done to assist in agricultural development misses its objective."

Apple Scab Control in British Columbia

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

SCAB has always been one of the British Columbia fruit growers' most formidable enemies, although in recent years it has been kept fairly well in check, due to the relentless war waged against it by the Department of Agriculture experts and the growers themselves. Nevertheless, it is still prevalent in many orchards, especially where the climate is moist.

Where weather conditions still permit this is the time to prevent its appearance in the orchard next year. It has been shown that this disease, which often becomes a serious menace unless guarded against, is spread largely by infected leaves. The best preventive measure is to see that the leaves are kept away from the roots of the trees, and the safest plan is to have them raked together, and kept well removed from the trees in a compost heap or also promptly ploughed into the ground and buried. Under the soil they will serve as valuable fertilizer.

While scab affects the leaves, flowers, flower-stalks and young twigs, the best known form of the disease is on the fruit, which is slightly affected if blemished with black spots, and if severely attacked is stunted, malformed and commercially worthless. Fruit that has been extensively "scabbed" often cracks open, thus becoming an easy victim of rot fungi.

McIntosh Red and Fameuse (Snow) are probably the most susceptible of all apples to scab. Yellow Newton, Gravenstein and Winter Banana also scab badly, while Blenheim Orange and Ontario are somewhat resistant. The disease is spread by the spores of the fungus falling on the leaves, fruit, etc., when, if there is moisture, germination takes place and the fungus enters into the outer tissues. Moisture, however, is the essential to germination. If moisture can be prevented the trouble is controlled.

THE CHIEF DEFENCE

While ploughing under the old leaves is one safe and effective measure of combatting scab, the apple grower's chief defence is in proper spraying. The object should be to coat the entire susceptible surface of the tree with a thin layer of some material through which the germinating fungus cannot penetrate.

Here are the methods recommended in British Columbia for fighting apple scab:

(1) When the first leaves are about the size of a ten-cent piece spray with

lime-sulphur concentrate 30 to 1. This is recommended when the opening of the buds extends over a long period owing to cold and wet weather.

(2) When the blossom buds are well separated in the cluster and showing pink, but before the blossom opens, lime sulphur 1 to 35 should be used. The same spray should be applied as soon as the petals have fallen. The mixture might run in the case as high as 40 parts to one of water.

(3) Two weeks later—or ten days if the weather is wet—the same spray can be applied. If the season is dry it may be deferred for three weeks.

(4) An additional spray ten days to two weeks later is practised in some parts of Canada, but is rarely necessary on the Pacific slope.

The Peach Borer

Tests covering a five-year period at the Ohio Experiment Station with the peach borer, indicate that "worming" twice a year is the only dependable method of control. Sprays, repellent washes and poison coatings are unsatisfactory to use in combating the borer and sometimes are even injurious to the peach trees.

Newly-set peach orchards are not readily attacked by the borers if the old, infected trees are cut out and burned. For orchards which have been planted a year or more, entomologists have found it necessary to cut the borers out twice a year—in November and during the early part of June. This prevents the grubs from extending their burrows which sometimes girdle and kill the trees. It also prevents the development of the life cycle of the borer, which, if undisturbed allows the moth to lay from 300 to 650 eggs.

Mounding the trees with six to eight inches of earth helps to keep a large number of the borers from gaining entrance to the roots. This mound should be hoed away from the tree one or two days before worming so that the borers may be located by the exuding gum. The cuts made into the trunks and roots of the tree should be with the grain of the wood and wedge-shaped to facilitate healing.

"I have found THE CANADIAN HORTICULTURIST very helpful, as it gives me many pointers on things that I have wanted to know."—MRS. WESLEY FREEMAN, Godfrey, Ont.

What Peaches to Plant, and Why

A. P. Marshall, Niagara Falls, Ont.

IT may seem unimportant what varieties of peaches are planted so long as they are good ones and produce in quantity and sell readily, but other considerations must be thought of as well if the orchard is to work to the best advantage when the trees get large enough to bear their crops regularly. Did you ever see the difficulty experienced in a large orchard planted entirely to one variety at harvest time when the crop is heavy? Invariably more waste and loss is necessary than the same acreage planted with varieties that ripen successively and consequently lengthen the picking season three to four times.

Two years ago we had occasion to see a hundred acre orchard planted to Elbertas ripen completely within a few weeks. The farmer had his S.O.S. calls for help out all the time, using the service of everyone possible to help him save the crop, and on account of the urgent need of hurry, the work could not be planned in the same methodical business-like manner that could have been possible in handling the same quantity in three to four times the length of time. At times, including helping friends and temporary employees, it seemed as though upwards of 100 people sat down occasionally to meals. Contrast this with a case where eight to twelve people handled fifty acres on a well planned basis, keeping pace with the ripening fruit and moving every good peach to a waiting market without loss or waste.

Of course there are a great many varieties and quite a few very good ones to select from, but the list below will

furnish one that will come into bearing in about the order named and bring fruit to enable the grower to handle it with the least possible amount of additional help and make the shipping season spread over as long a period as possible.

VARIETIES RECOMMENDED.

GREENBORO is one of the largest of the early peaches. It has a white flesh, and is tender and juicy. It is quite hardy.

ADMIRAL DEWY is an Elberta seedling and has given satisfaction as an early shipper and for this reason can be very profitable.

ST. JOHN is the first of the yellow fleshed peaches and is a money maker, supplying an early luscious peach that because of its early ripening gets the top of the market.

EARLY CRAWFORD supplies that large rich yellow peach known wherever peaches are grown. Many peaches are fine and very choice but none are quite as fine in flavor as the Crawford.

FITZGERALD, a Canadian production, is very hardy, has a deep yellow flesh, and is of very high quality.

ELBERTA, although lacking the flavor of some of the other peaches, is perhaps more in demand than all others commercially because it ships so well, arriving in perfect condition and appearing best for reselling in distant markets.

LATE CRAWFORD has the same wonderful flavor of the early variety and supplies the taste par excellence for the one who requires that above all else.

They ripen quickly, however, when the fruit is matured and bruise easily.

With such a comparatively perishable product as peaches accurate system must be observed to move all the picking and sell it at top prices with every good peach bringing all that the market will stand. This means that the crop will be moved just as soon as it reaches shipping state and shipment kept up with the ripening throughout the season to a sure market.

CAREFUL HANDLING NECESSARY.

Assuming that spraying, cultivating and all that will bring the crop to a successful mature state have been properly done a fine crop can easily lose much of its value by improper handling. Naturally one who has established a reputation for well grown graded fruit finds little difficulty in locating a sure market. Both the buyer and the seller wish to prevent any possibility of loss to their mutually profitable dealings and no pains are spared to retain the business of the one and the product of the other.

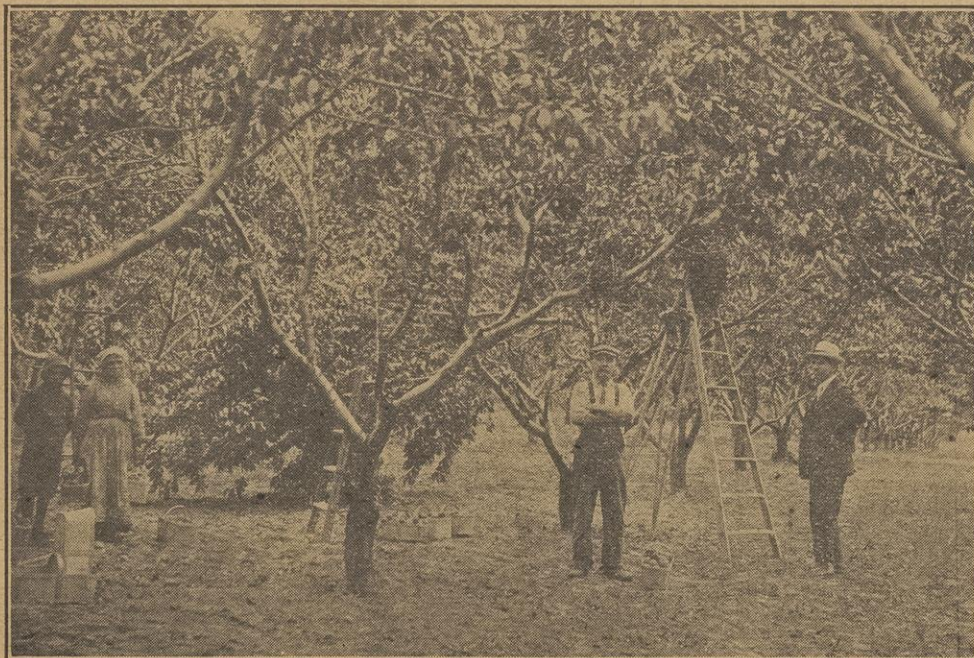
In the case of Mr. F. Gallinger and his brother, J. B., the matter of sale has become almost a secondary one. Proper grading and satisfied big buyers have made a regular market that wants more than they can supply. When shipping one to two cars a day the buyers are always urging for more cars and even bid a better price to get the choice quality the Gallingers give them. Just four men who wholesale direct (not commission men) pay an arranged price and all deductions for freight and commissions are entirely eliminated. These buyers are located in the smaller cities where the markets are not glutted with so much commission stuff.

MARKET REQUIREMENTS.

In the first place the fruit must be full grown but sound and firm. Full allowance is made for the few days of ripening between shipping and the use of the fruit. With the orchards arranged so that the early varieties are massed together and so on as they come into ripening straight picking can be done without skipping odd trees, as otherwise would be necessary.

All the fruit is carefully hand-picked into baskets without dropping to bruise them, using stepladders to get to all the peaches in the tree. Groups of workers keep filling up the baskets under a competent boss, placing them as filled together in a convenient place for the team to gather and keep the sorters busy. This team is kept constantly moving so that a regular flow of fruit goes from pickers to sorters all day long.

The sorters arrange the fruit so that all the baskets contain uniform size and quality. All fruit that could possibly hurt the high standard is eliminated and no question can arise with regard to payment. A mechanical sorter, similar to



Picking peaches in the orchard of Mr. F. H. Gallinger, Stamford, Ont.



Thinning has been practised with success in the orchards at Macdonald College, Que. These Yellow Transparent apple trees were photographed at harvest time, having been thinned between June 15th and 30th, when one-half to two-thirds of the apples were removed.

those used in sorting apples, is being used with some success. The necessity for eliminating the drop to avoid bruising makes it necessary to pick the fruit up off the sorter so that little time is saved. It has the value, however, of sorting more uniformly and requires less experience in grading the fruit.

The baskets here when properly graded and sorted are covered with red leno, adding considerably to the appearance of the fruit. The day's work accumulates until four or five o'clock, supplying as a rule the necessary quantity for at least one car and with the more rapidly ripening crop two to three cars every day. This means close to 10,000 baskets for each car. To handle this quantity every day of the shipping season means a business well in hand at every angle. A market ready waiting an early start to insure certain holding of customers to contract and even daily shipments to move all fruit before it gets beyond the best stage for shipping are all necessary to complete the process of selling every peach right. With varieties maturing in regular sequence the daily work will not vary more than the weather and steady regular work properly directed brings the shipping to a conclusion where all the results have been realized that conditions could assure.

The big double team comes into play here in taking the fruit to a nearby siding for loading with racks arranged to carry three tiers of baskets. A good quantity can be handled in each load and the day's work quickly placed in the cars for shipment. Arranged three tiers high, one on top of the other, the baskets seem to carry a very satisfactory way in box cars and reach their destinations sound and in the best shape for resale.

Thinning Apples

Prof. T. G. Bunting, Macdonald College, Quebec

THE Yellow Transparent, Duchess, and Wealthy apple trees planted as fillers in part of the Macdonald College orchard twelve years ago have been bearing heavily for some years. Since 1914 considerable thinning has been done in these varieties to the great advantage of the trees, and the resultant quality of the fruit. Thinning has not caused the trees to bear annually because there are other important factors entering into crop production, but in the thinned trees there has been a strong tendency towards annual production. The Yellow Transparent trees have only missed one fair or good crop in the last five years. The Wealthy and Duchess during the same period have produced either a fair or good crop each year, although individual trees have not always produced a crop.

The thinning has been done during the last week of June on the first week of July, starting with the Transparent, then the Duchess and the Wealthy last. It has been the practice to leave only one apple on a fruit spur, and where the trees have set heavily to remove all apples from some spurs, leaving the remaining apples, one to a spur, and four to six inches apart.

It has been observed that where every fruit spur on the tree has one or more fruit there is little likelihood of that tree producing a crop the following year, although the Wealthy is more apt to produce some fruit or even a fair crop. This is due in the Wealthy to the fact that fruit is often produced from lateral buds on branches two and three years old. In one case in a six-year-old block of Wealthy trees a heavy crop of fruit was produced entirely on the branches of the preceding year's growth. The Transparent and Duchess have a greater tendency to produce their fruit on spurs.

During the past season as well as in former years in thinning these three varieties over one-half of the fruits set have been removed. Care is used to remove those fruits which are defective in some respect, or ill-shapen, or seem to be less favorably situated as far as sunlight is concerned. Thinning must be done with judgment and with a proper understanding of the fruiting habits of the different varieties.

Although it is tedious work and takes time at a busy season, the expense is more than offset in the less number of fruits to handle at harvest time, and in the larger size and very considerably higher quality of the crop. In fact at the College the No. 2 and No. 3 grades in these varieties have been practically eliminated from the thinned trees.

Thinning may reduce the total bulk of fruit in some years of heavy production,

but over a period of years it will show a larger total yield and with the higher quality and consequent higher prices the total returns from thinned trees will be considerably higher, and the greater satisfaction in handling good fruits is worth much to an enterprising fruit grower.

It would not be advisable to thin all varieties of apples, but at Macdonald College it has been the practice in the Transparent, Duchess and Wealthy. Where trees of these varieties have been thinned, much greater returns have been obtained.

Be Careful When Pruning

Prof. J. W. Crow, Guelph, Ont.

LIGHT pruning in fall is permissible, but heavy pruning is dangerous and likely to result in serious damage from winter killing, especially if the succeeding winter is severe. The injury is caused by drying out of the cut area and may be prevented by covering all wounds of any size with a good covering of paint made from pure lead and oil. Do not use prepared paints, as these contain injurious benzine or turpentine dryers. To make an effective covering it will be necessary to give not less than two coats because one coat will not prevent checking and drying of green wood. Coal tar makes an excellent wound covering and is easily applied.

This matter of covering wounds made in fall or early winter is frequently slighted by orchard men, but the writer has seen such serious damage result from neglect of this precaution that he feels justified in warning fruit growers with regard to the practice. In experimental trials in the College apple orchard varieties as hardy as Duchess of Oldenburg, Wolf River, Snow and Scott's Winter have suffered very serious injury following November pruning with the cuts left unprotected. The wounds dry out around the edges and by spring the dead area is greatly enlarged, frequently extending down the trunk or branch for a foot or more. The dead bark comes away later leaving a large dead area detrimental to the parts above and certain also to decay later.

It is not likely that injury would follow the cutting of branches below an inch in size unless many were removed and there probably would be no necessity for covering such wounds. All above this size, however, should be thoroughly protected.

If you cannot get manure you will find legume crops ideal soil-improvers for strawberry growing.

Irrigation in the Okanagan*

F. E. R. Wollaston, Manager of the Coldstream Estate, Vernon, B.C.

IRRIGATION in the Okanagan can be divided into two main headings, namely, the supplying of water to other people, and, the use of water after it has been supplied. There are far more people interested in the latter than in the former. I have to supply the water to other people, and also to use a lot on the land and both give me a certain amount of trouble.

In supplying water to others, it is necessary first to have the dams and reservoir sites in the mountains, and in the Okanagan the site is usually at or near the top of a mountain. After finding the reservoir site, the next thing to do is to build the dam, and when you are building the dam you must always keep in mind the possibility of a good rise in the stream and find out also your surrounding soils.

Intakes are as a rule expensive to build and in high water there is trouble in getting water to them. As regards ditches, the man who has a good dirt ditch is a lucky man if it does not start to seep and seed to white clover. Lining your ditch with concrete requires skilled labor and costs a lot of money and does not always work as well as one might think.

Many flumes have to be built with all our ditches. When money was plenti-

* Extract from an address delivered at the last Annual Convention of the Western Canada Irrigation Association, held at Nelson, B.C.

ful and steel was cheaper, many steel flumes were built, but they are not satisfactory for irrigation just now. They are, of course, liable to rust when gravel gets in and slides along them. The wooden flume, with which most of us are familiar, gives us trouble, but most of those troubles can be overcome by proper joining. One cannot build the concrete flumes which Mr. Dawson of the C.P.R. has had built. A number of wooden syphons have been built instead of high trestles and a great many have been put out of sight and started to rot and nobody seems to know what they are doing down there so they must be replaced. A continual stave pipe syphon above the ground seems to be the most satisfactory, because then you can see how it is running—or not running. Concrete pipes are all right for road culverts, but not very suitable for a head of water.

There is a good deal of work in maintaining the ditches, owing to the grass growing along the banks and the long grass falls down into the ditch and prevents the water flowing and seems to cause seepage. This seems always to be the case in our ditches, and cutting the grass along the ditch is a difficult job for any one.

SUPPLYING THE WATER.

After you have got the works complete and running you have to supply

the user and there is a remarkable difference of opinion in the Okanagan as to how they like to get it. In the Okanagan there are two municipalities handling water, the Penticton and the Summerland. In the Penticton municipality they run water in the ditch every day, and in Summerland only two days to each user. The two municipalities were rather scornful of the methods of the other. That brings one down to the next item of dealing with the user. The human element crops up in all cases and more especially in that line. Very often you have to put a dam in a creek for irrigation works or you want to do it, and you often want to damn the user as well, but it is not good practice to do that. A man with a good line of talk, who can supply each water user and make him think that he is getting all the water in the ditch and that he is getting everything and the man next to him hardly anything, is a man that seems to make a success of being a water bailiff. You have to have a man who has no tendency to go up in the air.

From the water user's point of view we first come to his distribution works. I think the user should make his own distribution works. He should take care of them and keep them in shape. He has to make up his own mind as to what he will spend on those works and take into consideration the class of soil on his farm and the nature of the crops to be grown on his land.

As regards the supply of water for the different crops. Grain land irrigated in the Okanagan takes a good deal of water



A typical young orchard in the Okanagan District, B.C., where irrigation is extensively practised, the water being drawn from the hills shown in the background. At times during the summer the heat is intense and all kinds of fruit make very rapid growth.



A crop of cabbage that would make any grower feel proud. About 1200 head are here shown. They were grown by Mr. Dunn, of Todmorden.

in the early part of the season, and if much land is under the grade it can supply more land than if in fruit, which requires water well on into the season. I think every crop that we grow can do with one irrigation at least. The early fruits seem to require irrigation to mature them in the hot season. The other fruits and grain seem to do well with one irrigation.

I do not think enough has been done in the Okanagan to prepare the land for irrigation. Economy of water is one thing that we have fallen down on. We have saved it in concrete reservoirs and ditches, but then we let it go over the

land and out of the ditches and waste a large quantity of it.

In dealing with water users, I find a lot of them have not learned what I learned some years ago, and that is when you are irrigating and it rains, keep on irrigating. You will get much better results and I have not seen a crop spoiled yet by irrigating thoroughly in that manner. Another thing, when there is lots of water in the ditch use it by all means if you can. It may not be there the next week. I find that it is not a bad idea to irrigate hay quite late in the fall and right up to the frost, because the water seems to stay in the ground until the spring and gives it a good start first thing.

Notes on Dusting and Spraying*

C. E. Petch, Field Officer, Entomological Division, Ottawa

TWO plots, side by side, containing forty-five mature Fameuse trees each, which almost touched at 33 feet, were sprayed and dusted respectively, five times, with one exception, on the same day. The dusted plot was treated with a mixture of 45% talc, 45% sulphur and 10% lead arsenate. The sprayed area was covered with lime sulphur 1.010 for the first, 1.008 for the second, and 1.006 for the last three. Paste lead arsenate was used in the five applications, two pounds to forty gallons. The spray-gun was used for applying the liquid.

The first application was made May 8th when the blossom buds were pink. Rain fell on the 9th, 11th, 12th, 13th,

*A paper read at the September meeting of the Pomological and Fruit Growing Society of the Province of Quebec.

27th, and 28th, and there was a heavy dew every night.

The second application was given May 29th, when the petals had fallen. Rain fell on May 31st and June 1st and 7th.

The third application was made June 11th when the apples were just nicely formed. There was a driving rainstorm that night and rain fell on the 12th, 13th, 14th, 16th, 21st, 22nd, 29th, and July 1st and 3rd. Heavy dew nearly every night.

Application four was made on July 2nd for the sprayed plots and on the 4th for the dusted area. The apples were about an inch in diameter. Rain fell on the 5th, 6th, 8th, 10th, 11th, 14th, 15th, 16th, 17th, and a heavy dew on most nights.

The fifth application was given on July 18th when the apples had made considerable growth and the mixture is still present on the fruit in the sprayed area. Rain fell July 29th and August 4th, 5th, 6th, 7th, 24th, 26th, 29th, 31st and Sept. 1st and 6th.

The cost was 97c. for each dusted tree and 46c. for each sprayed tree.

As for results both plots are practically perfect. There will be about 300 barrels on each and it is doubtful if there will be one barrel on each with a scab.

A dry lime sulphur supplied by Sherwin-Williams Co. was used twice on an orchard of Wealthy and McIntosh Red. There was no injury to foliage or fruit when used at the rate of 2½ lbs. to 40 gals. water when dry arsenate of lead was added, 1 lb. to 40 gals. When examined a week ago the control of scab and insect was excellent.

Calcium arsenate is a much cheaper poison than lead arsenate, therefore an experiment was carried out to see whether or not it could be safely used in dust mixtures. A mixture of 45% talc, 45% sulphur, and 10% calcium arsenate was applied to fifteen Duchess trees on May 29th, June 11th and July 4th and 18th. The poison proved to be safe to use, as there was no injury to either fruit or foliage.

Weather Affects the Scale

Prof. L. Ceasar, O.A.C., Guelph, Ont.

The very long continued severe weather of last winter had quite a noticeable effect upon the San Jose Scale. This year there has been much less San Jose Scale in the Niagara District and in fact in Ontario than there has been for many years. The winter has been the main cause.

In Oxford County two orchards near Woodstock which have been known to have the scale in them for at least seven years and probably much longer are this year apparently free of it, and the winter is the sole cause. This shows that climate has a decided effect upon the San Jose Scale. There are many other things that could be brought to bear to show this, in fact were it not for climate there is no doubt that the San Jose Scale would be very much more widely distributed in Ontario than it is. It is practically limited in Ontario to-day to the district south of a line running from Toronto to Sarnia.

The first cause of trouble in transplanted trees is not infrequently to be found in the ignorance and lack of care exhibited before and during transplanting. Someone has likened the transplanting of a tree to a surgical operation, as being the time when the patient needs special attention; this is a thought which should be borne in mind at planting time.—C. F. Clark, Toronto, Ont.

Double Walled Hives for Wintering

By W. A. Chrysler, Chatham

WHILE different methods of wintering bees have been illustrated and described in the various bee journals of late, it is a singular fact that they have neglected to consider the merits of double walled permanent packed hives.

After over thirty years experience with various kinds of hives and appliances and different methods of wintering (except cellar wintering), I have settled the matter as to which hive I will continue to use and also the manner of wintering. The hive is what is generally called the ten frame Jumbo using nine frames instead of ten, and is a double walled hive permanently packed.

When discussing the subject of double walled hives with different beekeepers of note, and others, they have frequently presented arguments against their use, and yet ninety-nine out of every hundred beekeepers never used them. The arguments I have met with are these: Their extra cost, too heavy to handle, and not so safe to winter.

The extra cost of material of a double walled hive over a single walled hive is less than half a dollar. The material for a four hive winter case is 90 cts. or a dollar per hive for the cheapest lumber at present prices. The labor, of course, is more on the double walled hive than on the single walled hive and the winter case combined, but how much?—figure it out, then balance them.

The second objection I have met is that they are too heavy to handle! When, tell me, do double walled hives need to be handled when placed in the yard? Some say that they occasionally have to move them to an outyard and possibly to another yard. Now just think how often that would generally occur.

If the bees are in single walled hives they are heavy too and the winter cases need to be moved also, which are heavier and more awkward to handle than the double-walled hives. Now then on which side does the argument on that point lie?

What about the lifting and handling the single-walled hives, the time when they require to be lifted into the winter cases is when they are at their heaviest. The winter cases are heavier than the bees and hives, and unless they are in parts the lifting will require some "grunting." We will say that the single wall hive ready to be put in the case weight 60 lbs. For a 100

colony yard that would be 6,000 lbs., and when lifted out again in the spring they will weigh, say, about 15 lbs. each less, which would be 4,500 lbs.; the 25 winter cases of 4 colonies each will be, say, 150 lbs. each, nearly two tons more, to say nothing of the packing and labor connected with it. Just think over 14,000 lbs. of lifting or extra lifting on a hundred colonies of bees in a season over and above that of double walled hives which don't even require a grunt from their owner.

Now as regards their safe wintering, I have found them as safe and more practical in many cases than any other form of wintering. Twenty-eight years ago I visited one of the largest and doubtless one of the most progressive beekeepers in the Province of Quebec, where he had upwards of two hundred colonies in one yard, all in double-walled hives. I again this fall had the pleasure of visiting that same yard of double-walled hives. If they had been a failure they would have been discarded years ago. Does not this speak for itself?

Succeeding With Bees—Some Observations

By D. Anguish Lambeth

IN the November issue of the Beekeeper appears an article by Mr. John Moore, which contains some excellent advice and observations for the man who would make a success as a beekeeper. The following observations along these lines, which have been tried, tested and proven in my experience may help some reader to avoid a few of the pitfalls which are numerous on the highway to successful beekeeping.

First let me say, there is no royal road to success with bees except that of hard work, study, observation and enthusiasm. Without enthusiasm nothing can be accomplished. The beginner must get the bee fever pretty severely before undertaking the job. This fever works exactly opposite to

what it does in the "flu" or smallpox, in that the more the patient has of it the better chance he has to survive. As with these same diseases the patient with the bee-fever may have very many severe sick spells and relapses, but if the fever was there good and strong his or her recovery is assured.

One of the primary requisite qualifications that the aspirant to success as a beekeeper must have is that of stick-at-iveness and the staying qualities of a Jack Johnston so that should he get a hard blow in the first or fifth round he comes up smiling, refusing always to "take the count." In my long experience as a beekeeper, it has been my privilege to meet most of the successful bee men and I do not know of one who has not received at some time



Apiary of Henry Dupont, Notre Dame De Stanbridge, Que. This apiary numbers around 175 colonies, and is run for extracted honey. The ground in this apiary is covered with a six-inch deep coating of sawdust, which keeps it dry at all times, and prevents the grass from growing.

in his experience some bad blows and reverses that would have seemed to put him out of business, but he came back again "wresting success from grim failure, just because they knew how to hang on."

To the beginner in beekeeping I would also say, become a member of the Beekeepers' Association, and take several bee journals. It is just as hopeless for a doctor or a lawyer to succeed in their chosen professions without reading their respective organs and keeping abreast of the times as it is for the beekeeper who will not subscribe for some good journals on beekeeping to attain the success he is striving for.

I would emphasize what Mr. Moore has said that the successful beekeeper must be a keen observer of nature. He must observe the slightest variation and change in the climatic conditions which would affect in any way the secretion of nectar.

Many faddists there are who have gone out into the world with their own ideas on wintering and their own special hive, and the firm conviction that their way is the only way and the hive they use is the last word on hive making. Let not the beginner be disturbed. In my forty years experience I have seen many of these faddists change most wonderfully. It would seem as though every successful beekeeper has a hobby or rather, perhaps, a theory I should say, regarding the best hive. Some prefer a very large hive that may require two or more men to handle, while others prefer a very small one that one person can handle with ease. Both of these hives have given good results in the way of honey producing, and one would not be safe in saying that the one is better than the other, the beekeeper must determine that for himself. It is the same with wintering. Some prefer to winter their bees outside in packing cases, or in permanent packed hives, while others use their cellars for this purpose. Each method has something to say in its favor and local conditions should be studied when considering this question.

The students of the Ontario Agricultural College, are to-day in a very different position from that in which I was when I took my first lessons in beekeeping. The College has now an organized department of apiculture. They have a competent instructor. They have all the modern apparatus for handling bees. In my younger days we used the puff ball and brimstone, wore woollen mits, and carried a cow bell.—Wm. Couse, Streetsville, Ont.

A Famous Bee Man Who Has Had a Good Time

By E. L. Sechrist

AT eighty-five years of age Dr. C. C. Miller, of Marengo, Illinois, can look back on fifty-six years of successful bee-keeping. Although his locality is not a particularly good one, he holds the record for section comb honey production with a yield of nearly twenty thousand pounds from only seventy-two colonies.

Even before he became interested in honey he must have taken the little busy bee as his model. Starting with only thirty dollars in his home-made,



Dr. C. C. Miller, who, at eighty-five, is as interested in bee-keeping as he was fifty-six years ago when he began. He has a variety of interests. "And what a good time I've had!" he says.

home-spun trousers, he worked his way through college and also through a school of medicine. Himself a musician and a composer, he was at one time business manager of the Thomas Orchestra.

But it was not until he began to keep bees that he found his life work. In 1861, his wife caught a swarm of bees and hived them in a sugar barrel; and Doctor Miller became so interested that in 1878 he made bee-keeping his sole occupation.

"I began," he says, "with the purest black bees. Then I got some Italian stock; but in my ignorance I left them to their own devices in breeding. I bred up this strain of hybrids until it was ahead of any other I knew; but I had ignored every factor except their ability to store honey, and I found myself with bees so full of viciousness that they seemed to think they could run the place without me.

"I concluded to take less honey and stay where I was. So I got a strain of pure American Italian bees—more beautiful than those reared from imported queens and more uniform, too. In five years this strain was producing even larger crops than the vicious hybrids had stored.

"Many people think all honey is alike; but that is a mistake. It may be of good, heavy body or it may be quite thin. It may be granulated, or candied; more solid even than lard. It may be colorless as water, or as dark as molasses. As for the flavor, it varies just as the odors of flowers do. Among the light-colored honeys are white clover, linden (or basswood), sage, sweet clover, alfalfa, willow-herb, etc., and among the darker are found heart's-ease, magnolia (or poplar), horsemint, buckwheat, etc.

"In these days of adulteration it is a comfort to know that strictly pure honey can still be had. The silly stories about artificial combs being filled with glucose and deftly sealed with a hot iron have not the slightest foundation in fact. For years there has been a standing offer of a thousand dollars for a single pound of comb honey made without the intervention of bees. The offer remains untaken, and will probably always remain so.

"At the present day honey is placed on the market in two forms—in the comb, and extracted. 'Strained' honey obtained by mashing or melting combs containing bees, pollen and honey, has rightly gone out of use. Extracted honey is simply honey thrown out of the comb in a machine called a honey-extractor. The combs are revolved rapidly in a cylinder, and centrifugal force throws out the honey. The comb remains uninjured, and is returned to the hive to be refilled again and again."

Doctor Miller has discovered that bees cannot stand cold weather. He therefore places his bees in a special cellar under his house each winter, warming the cellar artificially to the temperature at which they will become drowsy and slow-moving. In this state, they will not consume much honey, and they will also save their energies for the spring work.

With this stored-up energy the young bees which have been reared during the winter will start to work on the early spring flowers and so waste no time. In the spring bees must also be protected from sudden changes of temperature, as well as given larger quarters than in the winter, so as to make room for new arrivals in the colonies.

For some time Doctor Miller has had only his home apiary or not more than a hundred hives. Rather than count his colonies by the thousand, he has preferred to be an intensive beekeeper and to produce large crops of



Looking for the Queen. Geo. E. Moss, of Souris, Man., at work in his apiary.

fine honey from fewer colonies, and his success is proved by the fact that for many years his honey has been contracted for at a good price long before it was produced.

To younger bee-keepers he says:

"If you have no other interest in bees than the money to be made out of them, let 'em alone. But if you are so built as to love bees, to think bees, to dream bees, go to it; your chance to-day is better than when I began. And let me advise you to breed from the best all the time for all your colonies. Fight desperately against swarming, or, in other words, keep the forces together, and persistently try to have each colony of the very best stock."

Doctor Miller believes in honey as a daily article of food. "Not," he says, "because I'm a bee-keeper and want to help the honey market. I take it simply and solely because I want to live as long as I can, and be as well as I can while I do live. And I think it makes a difference worth considering whether I put upon my digestive system the burden of inverting so much sugar, or giving it honey which contains sugar that is ready for direct assimilation."

At eighty-five he sings in the church choir and is chorister in the Sunday school. At the age of eighty he resigned from his office of chairman of Young People's Societies for a group of thirty churches; but his resignation

was not accepted and at eighty-five he still holds the position.

Bees are not his only hobby, for he loves flowers. "I could hardly live without roses," he says, and he has more than one hundred and fifty of the choicest kinds and a thousand gladioli, while his wife is an expert on chrysanthemums.

"In my fifty-seventh year of bee-keeping," says Doctor Miller, "I am just as much interested, just as keen in working out new problems and, I admit, just about as likely to try some fool thing that may turn out wrong, and, withal, just as grateful to God for the enjoyment of it all, as I was in the middle of the past century. And what a good time I've had!

"If more men—and women, too, for that matter—would make the thing they like to do their life work, instead of merely a diversion and a side issue, they would find it a road to material success as well as a source of content and happiness. Study yourself and find out what you really enjoy doing. Then hunt for business possibilities in that line—and go after them as hard as you can."—From American Magazine.

If any one has lost heavily from disease it is wise, when buying bees, to secure them from sections where they have recovered from disease, as their bees are far better to ward off trouble than those where disease has never appeared as that class of bees only prolongs the trouble

Beekeeping at Monteith

By C. E. McDowell

AT the Experimental Farm, Monteith, a small apiary was started in 1912 or 1913. It was an attempt to test out the suitability of that district for bees. At that time beekeeping in Northern Ontario was in the pioneer stage, and settlers believed that bees could not withstand the long, severe winters. The bees were wintered outside in a small shed built for the purpose. It was constructed in such a way as to give the same advantages as the ordinary packing cases. It was a long narrow building, about 15 feet by four feet. The lower half of the south side was left open, so that when the cases were packed the vent tubes could be shoved through the facing board to the openings in the hive. During the first two winters they came through in good condition, but the third season they froze, due to a mistake in packing. The summer season of 1915 was a record breaking period as far as the bees at the Station were concerned. They wintered outside during the winter season of 1914-15 in splendid shape.

During the summer they produced the record colony for Ontario for the largest production of honey per pound of bees. Unfortunately, however, the colonies were poorly packed for the winter season of 1915-16. They wintered through in good shape until the middle of March. A short thaw set in, causing a loosening of the packing around the vents, which slipped down and closed the openings. Freezing immediately set in again and the packing material froze solid and adhered to the supers, making it impossible for the bees to bore through. Consequently they were killed. This was not a fault of the system. It was due to carelessness in packing. The opening from the hive to the vent in the wall of the case should have been protected against any possibility of it becoming plugged. During the winter of 1916-17, the bees were wintered in the cellar. The cellar was too light and warm, consequently the bees came out for flight and were lost.

My observations while in the north lead me to believe that with reasonable care bees will winter outside in Northern Ontario in good condition. It has the possibilities of becoming a wonderful bee country.

"I like THE CANADIAN HORTICULTURIST fine, and find much useful information in it."—R. J. COURTNEY, Milne, Kinley, Sask.

Queen and Hive Records

Harry W. Jones, Bedford, Que.

IN a small apiary of around a dozen colonies the matter of hive records is not of first class importance as the history and condition of each hive can readily be remembered. In an apiary of two hundred or more colonies it is impossible to remember the individual condition of each hive and some method of record keeping must be resorted to in order to work most efficiently and without loss of effort. If the beekeeper is engaged more extensively in the production of honey it is not necessary that the recording method should be so exact or precise as for the one who is occupied with queen rearing and increase. The principal record needed by a honey producer is one which will keep track of the age and condition of queens and enable him to requen before the queens get too old to do the best work. In our own yards we replace all queens which have given three summers' service, that is to say, we do not keep a queen in a hive for more than two winters as a rule. I do not say that a queen will not, in some cases, maintain her ability to keep up the strength of the colony for a longer time than this, but when the average queen has maintained a big colony for three seasons' work it is problematical to expect that she will be in the lead in egg production when the work opens for the fourth season. An old queen unless quite feeble is not especially noticeable during the summer months, but they show up plainly in the fall and spring. An old queen will stop laying earlier in the fall and will be slower to begin in the spring than queens which have a shorter period of service to their credit. For this reason it is obvious that it is to the advantage of the producer to keep note of the date of introduction of queens or of the date on which they began to lay. A simple way which we employ ourselves is to tack a piece of section to a hive when a queen begins to lay. If the queen is transferred to another hive the section is removed and fastened on the hive in which the queen is put. On the section is noted the date and year of introduction in large figures, which makes it an easy matter for the apiarist in walking down the rows of hives to note what queens are reaching their limit and to replace them from time to time. Another way, which is nearly as good, but more cumbersome, is to keep the hives numbered and to note the facts about each in a convenient notebook.

For the beekeeper who is interested in making increase it is necessary to keep available a memorandum of the number of frames which are contained in a hive and whether there is a queen cell or a virgin in the nucleus. In our own case we designate the number of frames by a corresponding figure which is marked inside a triangle marked on the front of the hive, the condition of the queen is noted inside of a square also marked on the front of the hive. After becoming used to these symbols it is a simple matter to know exactly what the condition of each colony is by walking along the rows. Without the use of these symbols, however, the observant beekeeper can tell fairly well what the condition of the colony is like by noting the action of the bees at the entrance, whether they fly briskly or if they appear to be loafing. If there is a poor queen or no queen at all in a colony the bees will show it by the indifferent way in which they are flying about the entrance, and on the other hand, if they have a good, vigorous queen they will show it in their actions. It may be remarked here that one of the signs that a colony is about to swarm is when the bees are clustering quietly around the entrance and very few working bees are out. To look down a row of hives on a busy, sunny, summer morning, say about ten o'clock, and notice one colony without a crowd of workers hovering in the air before the entrance, with the bees clinging quietly in a cluster about the entrance or sunning themselves on the lighting board is fair warning to the experienced bee man

or woman that there is going to be "something doing" within an hour or two.

Any kind of records in the apiary must be of such nature that they are convenient to use and are simple and more or less permanent according to whether they are meant for several years or for one season only. An elaborate system is most often cumbersome and degenerates into a nuisance as soon as the enthusiasm of the inventor wears out. It is not essential but is a help in keeping track of things to have the hives numbered as a rule.

Should Beekeepers be Licensed?

Mr. John Moore, Strathroy, asks this question on page 261 of the November number of *The Beekeeper*, and further says, "Has not the time come in Ontario when all beekeepers should be licensed? Foul-brood is on the increase and if a man does not and will not take proper care of his bees his license should be cancelled."

One of the proposed amendments to the "Foul-brood Act, 1911" of British Columbia, which it is hoped will be passed at the next session of the Provincial Legislature, is as follows:—"All persons keeping bees in the Province shall be required to register their full names and addresses annually, on or before the 31st March in each year, with the Department of Agriculture, and to pay a minimum registration fee of one and a half dollars up to six hives, and an additional twenty-five cents per hive up to twenty hives, with a maximum of five dollars. The Minister may refuse to register any beekeeper on what he may consider sufficient grounds. Any person keeping bees without so registering shall be liable to a fine of twenty-five dollars and not exceeding one hundred dollars. Inspectors shall have full powers to enter any land or premises and to destroy all bees, combs

and hives found thereon if the owner has not registered or fails to produce current certificate of registration when required."

The prevalence of European Foul-brood over a very large area of the Province in the Coast region has prompted the seeking of stronger measures for dealing with the situation that has arisen, which, if not promptly dealt with, bids fair to make the profitable keeping of bees quite an impossibility.—W. J. S.

Swarm Impulse; Is It Inherited?

By Arthur C. Miller.

QUEENS from cells produced under swarming conditions are among the best, but, unfortunately, there is a growing tendency to destroy such cells because someone said that queens produced then inherit the swarming tendency. Each season the statement is repeated without any evidence in support of it. It is merely a part of current beliefs as to heredity and is as erroneous as many others.

If queens produced thus were replaced with equally as good ones, no fault could be found, for the only loss would be the labor of the beekeeper; but the specially reared queens are often inferior, due either to method of production or transportation. The result of the change is a mediocre colony until the queen is superseded. "Supercedure cells" and "swarm cells" are identical; the conditions which produce one are present and operative when the other is produced. It takes but little observation to see the condition of a colony superseding its queen. She is slackening her laying, there is a disproportionate number of nurses to larvæ, and queen matters generally are on the down grade.

At swarming time we find the same relative conditions, only with greater numbers and more food present. In the first instance the failing queen produces the condition. In the second, slackening of the queen is due to temporary exhaustion, or clogging of combs with brood and stores, forces the



Mr. Eugene Goudron, of Berthierville, Que., and his apiary. Mr. Goudron has his hives on supports, which keep them above the grass, and make it easy to mow the apiary with a sythe.

slackening. In each case the result is the same—queen-cell production.

Swarming by no means follows supercedure during the flow (usual swarming time). Nor does an old queen always resume her full duty in the new home. It is far from unusual for an old queen to be superseded soon after the colony is established in its new home. I have noted five such cases this season. In those instances, swarm impulse followed normal failure of the queen.

I may not have used as many thousands of cells as some of the craft, but I have used a good many since 1880; and I have never yet been able to detect any sign of inheritance of swarm impulse from use of swarm cells.

In recent years I have reduced swarming to between one and two per cent of my colonies, and I have used many queens raised from cells produced in swarming colonies of my own and of other beekeepers.

It is folly to discard fine cells just because they were built by a swarming colony. Don't do it unless you really like to throw away time and money.

Save the cells which you cut from colonies about to swarm, but do not think that by cutting them out you are using the best method of stopping swarming. Of course, if you really enjoy digging through a big colony on a hot day and doing it at intervals for some weeks, and to many colonies, why, go ahead. Far be it for me to interrupt your amusements.

For my own part, I prefer to remove the queen, using her elsewhere, or destroying her, as I think best. Usually I then cut out or destroy all but two cells, leaving two of as nearly the same age as possible. If of the two cells left, one is ready to hatch and one just ready to seal, swarming with the virgin is not unusual. When two cells of nearly the same age are left, one is destroyed soon after the first hatches, but not so when one cell is very young or just started. Do not ask me why—I have a theory, but am busy just now, and it is of no consequence anyway—'tis the fact only which is of importance.

Save the "swarming cells" if the stock is good. The queens will not inherit any swarm impulse.—From the American Bee Journal.

A Simple Stimulative Feeder

F. W. L. Sladen, Apiarist, Dominion Experimental Farms

IN the working-out of the intensive system of beekeeping outlined in the October number of THE CANADIAN HORTICULTURIST AND BEEKEEPER, the feeding daily of about one pound of thin syrup during the honey dearth that takes place between the dandelion and clover flows was tried and proved to be of great value for increasing the production of bees for working on the clover.

To avoid the labor of filling up the feeder every day, a feeder that would hold, say a week's supply, and automatically serve it out to the bees, would be very useful. Many feeders have been designed to thus regulate the supply of syrup. One of these, the "Wilkes" feeder, consisting of an aluminum dish with holes in the bottom containing screws that can be turned to regulate the flow of syrup, has recently been tried at the Central Experimental Farm, but was found unsatisfactory because not only had the syrup to be carefully strained to avoid clogging of the holes, but the flow was rendered uneven by the varying density of the syrup.

Instead of regulating the flow of syrup from the feeder, it was decided to try regulating the number of bees having access to the feeder. For this purpose the ordinary 10-pound honey-pail



In the apiary of Geo. E. Moss, Souris, Manitoba.

feeder with numerous small holes punched in the lid was used. The feeder was filled with thin syrup made from equal parts of sugar and water, and placed over a colony on September 23rd, with a square of wood 7-eighths inch thick, having a hole seven-eighths inch in diameter in the centre, placed between the feeder and the bees. The feeder was examined on September 25th: the hole was found filled with feeding bees and two inches of syrup (about two pounds) were found to have gone through. It was examined again on September 28th: the hole was still filled with bees and the amount that had gone through had increased to three and a half inches. After this the experiment was unfortunately stopped because the feeder was found to have been tampered with by visitors, and cold weather followed. In further experiments the hole will be covered with wire cloth.

Fads of a Beekeeper

By J. D. EVANS

IN the July issue of The Beekeeper there appeared a short article of mine on some of the modifications of the Demaree plan of swarm prevention I was then working out. I mentioned that starting from two storey hives full of bees, honey and brood, I on June 15 raised all the brood except three combs, filled up the bottom storey with two full sheets of foundation and four of drawn comb, thus making three storey hives—and no swarm up to the present time.

Now for the results. Starting the season with 91 hives, I had three swarms, all cases of superseding swarms. This is better than looking for queen cells every week; one looking over is enough.

For covers on my hives I use two straight inch boards with a piece 1½ x 1½ inch between them. This lid is heavy enough that it never blows off. The ½ inch space gives ventilation and prevents the sun beating down on the hives, reduces the danger of comb melting, lies flat and warm on the quilts in cold weather and piles up well in the honey house in winter. Three inch nails are used in putting them together, so there is no warping. In many pictures of bee yards I see stones and bricks piled on the hives to keep the lids from blowing off. This is not necessary with these lids of mine.

The entrance block I use is one inch by two and as long as the hive is wide, and is held in place by a picture nail. This should be put in a little to one side of the centre of the hive, so that one half of the entrance can be given before entirely removing the block. When the block is across

the entrance no bee can get in or out, a handy arrangement when taking the bees into the cellar or in case of robbing. There should be a small piece cut at one end, say ¼ inch by ½ inch long. When the bees are taken out of the cellar push the block across so that the entrance is only ¼ inch by ¼ inch and there will be no drifting.

My entrances are only ½ inch high and as wide as the hive. I see Dr. Miller's are two inches high, but he uses a sort of grate on the bottom board. I find this entrance I use sufficient for the hottest day in summer and also for the cellar, and as the bottom boards are never loosened, the dead bees are all on the floor in front of the hives and easily swept up. As my bottom boards are never loosened, I have taken the bit of an old plane and got a stout iron handle 2 feet 6 inches riveted to it, and with this I can plane off any obstructions the bees may place on the bottom board. I also have a scraper so that I can rake out the dead bees or any other rubbish that is there.

Just one more fad, I use no wiring. I have bought out several apiaries and got a good many wire frames. They were often a nuisance with broken wire and wire on one side of the comb. To my mind they are a useless expense. When the full sheets are put in the bottom of a three storey hive only two or three at a time and the bulk of the bees in the two top stories there is no thought of bees on the combs to injure them. I find my combs quite satisfactory without wire.

Let's Go South! An Invitation

Editor, BEEKEEPER: I do not mean to remain there for long—just from the middle of January until "spring begins," as the almanacs say, about the 20th of March. A shortage of coal last winter was the impelling force that sent me to Bermuda and this year a similar shortage I expect will induce me to go somewhere. It has occurred to me that it would be so much more enjoyable if we could get up a party composed of those engaged in kindred pursuits, and so I am appealing to the readers of the HORTICULTURIST AND BEEKEEPER for some of them to come too. I have in view this winter a trip to Nassau, one of the Bahama Islands, about a six-hour sail from Jacksonville, Florida. This island has been specially recommended to me. Of course, we need not make a long stay unless preferred, as there is so much to choose from and so close by. If a sufficient number would go we could have our private car—which would make it still better. Will you be one of them?

G. A. DEADMAN, Brussels, Ont.

Plant Orchards Now!

IT IS THE OPPORTUNITY OF THE HOUR FOR EVERY CANADIAN FRUITGROWER



Harvesting Alexander Apples at Macdonald College, Que.

THE close of the War has completely changed the fruit situation in Canada. For the past four years, fruitgrowers have been greatly handicapped by the embargo on exports of fruit to the European Markets, poor crops and other disadvantages. Now markets are open once more, for the embargo has been lifted and apples may be shipped to Great Britain under a general license.

NOW IS THE TIME TO PLANT OUT APPLE TREES

BECAUSE—

1. For ten years there have been no big plantings of apple trees in Ontario, and of these many are dead and worthless. Professor Crow, of the Ontario Agricultural College, stated recently, "Of the thousands of young trees set in the boom years of 1905 to 1911, a large proportion have already passed out of existence. Probably not more than 20% of the trees planted during these years will figure in the commercial production of the future, and certainly not more than 40% of them are alive and receiving reasonable attention to-day."

2. Last winter a large number of the older orchards were winter-killed by the severe weather conditions. Thus the apple orchards of Ontario are now at a minimum. The fruitgrower who is looking forward to the coming years, should realize that now is the time to plant.

3. Since the war, many orchards have been sadly neglected, so that it will take years to rejuvenate them.

These conditions and the opening of export markets predicts a coming boom in the fruit industry. The grower who plants first will be the first to reap the reward.

A word of advice, when planting! Don't plant poor trees. Buy vigorous, healthy stock that will give early and permanent satisfaction.



A Well Kept Apple Orchard is a Paying Investment

(Advertisement)

Money In Apples

AN APPLE ORCHARD IS A BETTER INVESTMENT THAN AN ENDOWMENT POLICY.

ANOTHER important reason why growers should begin planting orchards at once, is the rapidly growing scarcity of fruit stocks. When the war began, nurserymen generally had a fairly large stock of apple trees, in addition to which, the previous spring, they had planted heavily in young seedlings which had to be budded or grafted. The last of them are now saleable trees, and in a couple of years will be finished.

Meanwhile the supply of French seedlings

on which nurserymen in both Canada and the United States depend for their stocks has become very small. This state of affairs will make fruit trees scarce for many years. A United States authority recently stated: "Little propagation has been going on due to lack of labor and other causes and little lining-out stock imported. As a consequence there is every indication that in two years from now there will not be enough stock in the country to supply the demand."

Sharp Advance In Prices

THE shortage of stocks will cause shortly a considerable advance in the price of apple trees. Growers will be wise to buy now, while prices remain nearer normal.

Best Varieties To Plant

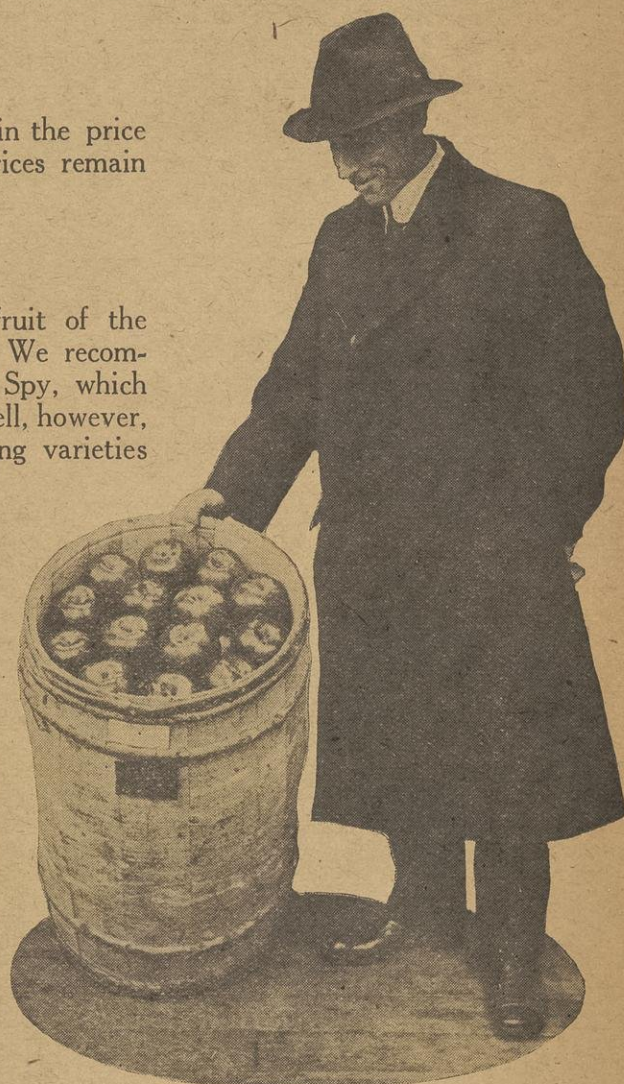
THERE will always be a good demand for clean, well grown fruit of the leading varieties both on the Canadian and British markets. We recommend in planting permanent orchards a large proportion of Spy, which still continues to be the most popular winter variety. It would be well, however, to consult with the nursery firm with whom you are dealing in selecting varieties best suited for particular localities.

A well known Apple Grower and Exporter writes :

"I have more call for Spy than anything else. I would say, that even a year like the present, I do not know of anything on the farm that will pay like an orchard of the right varieties, properly taken care of. I believe in nine years out of ten, a ten acre orchard, with proper care will give as much profit as the remaining 90 acres of a 100 acre farm devoted to general farming."

*What Prof. J. W. Crow says:

"I do not believe as some do that the market situation requires to be straightened out first. On the contrary I am quite convinced that any fruit grower who is able to produce year after year a satisfactory crop of reasonably high grade fruit will have for years to come an active market to take his product off his hands. In other words, I believe that our fruit growers lose out not in marketing but in production and that if they will grow the fruit they will be able to sell it without difficulty."



Clean, Well-packed Apples Always Sell

Apples Versus Peach Orchards

SOME years ago when the outlook for the peach industry in the Niagara district was promising a considerable number of growers were led to uproot their apple orchards in order that they might set out peach trees. The vicissitudes which have befallen the peach industry since then have shown that in many cases their action was not wise. Speaking to some of the Niagara Peninsula fruit growers some time since, Prof. L. Caesar, of the Guelph College, stated that a well cared for apple orchard was as great a source of profit over a twenty year period as a peach orchard. In spite of this many fruit growers continued to neglect their apple orchards, some of them spraying only for the San Jose scale. Unless given proper care, orchards had better be taken out. Fruit growers who spray systematically increase the marketable quantity of their crop by 50% and the

quality by 75%. Prof. Caesar stated that fruit growers should not be satisfied with less than 95% of clean fruit.

Apple orchards are not the only lines of fruit that have been neglected. According to Prof. Caesar, even pears, cherries and some varieties of plums have been neglected in the matter of spraying. In these orchards good spraying would increase the yield 30%, as well as greatly improve the quality. Some fruit growers make a practice of consulting their neighbors about the sprays they should use, with the result that they not infrequently receive inaccurate information. This increases the cost of spraying and leads to unsatisfactory results. Prof. Caesar pointed out that the Provincial Government has been studying the spraying problem thoroughly, and has worked out accurate spraying calendars. These have been prepared on the most economical basis possible.

is not to be taken as a model for the future development of the industry. The fact that an operator renting orchards as a business requires to rent several in order to get acreage enough to make the venture worth while is additional proof, if any were needed, that the future of apple growing lies in the large orchard.

Another important point which should be strongly gone into, in case a survey were made, is the matter of whether or not it is possible to conduct apple growing as an exclusive specialty on a large scale or whether it can be satisfactorily combined with other industries such as stock raising, dairying and the like. The writer is of the opinion that the best possible economic basis for apple production is a combination of apple growing with general fruit growing, such as is practised, for example, in the Burlington district. Apple growing there is carried on along with the growing of pears, plums, cherries, raspberries, currants, gooseberries, and strawberries. No doubt peaches and grapes would be included in the combination in a commercial way if the climate of the locality were as well suited to them as it is to the fruits mentioned.

The Position of Ontario's Fruit Industry

WHEN asked recently by THE CANADIAN HORTICULTURIST for an expression of his views on the prospects for the fruit industry in Ontario, Prof. J. W. Crow, of the Guelph Agricultural College, replied as follows:

Now that hostilities have ceased, the effect on Canada's apple industry should be immediate and direct, because of the removal of the British embargo. With respect to small fruits, plantings have increased and are increasing very rapidly under the stimulus of high prices and in spite, moreover, of high wages, I think the increase in strawberries and raspberries has been very marked, although I am not able to estimate the same in acreage or percentage. I believe that for the immediate future the best openings are in raspberries, strawberries, currants, and gooseberries, but I also believe that special emphasis should be put on the importance of planting cherries, plums, pears, peaches and apples, in order to meet the probable shortage of the near future.

I do not believe, as some do, that the market situation requires to be straightened out first. On the contrary, I am quite convinced that any fruit-grower who is able to produce year after year a satisfactory crop of reasonably high-grade fruit will have for years to come an active market to take his product off his hands. In other words, I believe that our fruit-growers lose out not in marketing but in production and that if they will grow the fruit they will be able to sell it without difficulty.

APPLE PROSPECTS.

In reply to some questions that were asked me some time ago, before the armistice was signed, I replied as follows, my remarks being intended to apply more particularly to apple growing:

It has seemed to me for some time that unless something is done, we in Canada are likely to find ourselves in a bad way for a supply of fruit for our tables. The commercial grower of fruit is intensely interested, but even his interest is subordinate to that of the consumers of fruit, most of whom appreciate the importance of fruit in the dietary, and who should certainly not be allowed to suffer for lack of this important and necessary element.

In reference to the important industry of apple growing in the province of Ontario, it is my opinion that the situation is bad and has been steadily becoming worse. We have had several bad seasons in a row with more or less complete crop failures or with low grade fruit in consequence of weather conditions favorable to disease and insect pests. Labor costs, which constitute by far the most important item entering into cost of production, have been climbing to points hitherto unprecedented. The result is that the majority of orchards have been allowed to fall into neglect. This is particularly true of the

small orchards—those up to five or six acres in extent and very frequently those up to ten acres or even more acres in size. In point of fact it is not too much to say that the small orchard in the province of Ontario has dropped out of sight as a factor in production. Inasmuch as a very large percentage of the apple acreage of Ontario consists of these small orchards, it is quite obvious that the present situation is one of very serious depression. The present is the critical time and unless vigorous action is taken the industry will suffer permanently, or take many years to recover its normal healthful tone.

LARGE ORCHARDS ALL RIGHT.

The orchards above a certain size are for the most part being well cared for and it is in this fact that hope for the future lies. It is surely not too much to say that if the small orchards are being allowed to pass into neglect it is because they are unprofitable under present conditions, and, conversely, if the large orchards are being cared for it is because it pays, even under present conditions, to look after them. Just where the line is to be drawn between the profitable and the unprofitable orchard in Ontario at present might very well be the subject of a special Government inquiry, and I would strongly urge an accurate and comprehensive survey in order to determine the minimum size an orchard requires to be to justify the expense of care and attention under present conditions in this province. Other definite points which should be determined are with reference to conditions making for success, such as soil, drainage, location, shipping facilities, varieties, the use of fertilizers and manures, as well as details of spraying and tillage practices. This matter of an accurate survey of present conditions might very well receive special attention from the Ontario Fruit Growers' Association in their forthcoming annual convention.

AN ECONOMIC CHANGE.

It remains to be pointed out that this change in the conditions of apple production is being brought about by a matter of economics, and is moreover entirely normal and quite to be expected under the circumstances. Anyone who has travelled through the apple growing districts of New York State will realize that the new conditions appearing in our horticulture are identical with those which appeared long ago in the horticulture of the older and more established states to the south of us. Apple growing in New York State took on years ago the aspect of large scale production from units of comparatively large size. In Oxford county, Ontario, are to-day numerous first-class orchards of good varieties of ten or fifteen acres in extent with which the owners refuse to be bothered. Many of these are rented by other parties. While such a scheme may be encouraged as a temporary expedient, it

HARDY VARIETIES NEEDED.

Other important problems are the selection of satisfactory commercial varieties which would be hardy enough to avoid the very serious losses occurring in Ontario from winter killing of tender sorts. The indications are that Baldwin, for example, is not to be depended upon for hardiness. How far it is safe to plant it in Ontario is a serious problem. On the use of fertilizers we have very little information, but it is absolutely impossible to secure profitable crops without feeding the trees. My own opinion is that there is a greater improvement to be made in the matter of feeding the trees than in any other feature of our orchard practice.

Concerning the question of new markets, it has long seemed to me that our high-grade Spies, Snows, McIntosh, etc., would find a ready market at top prices in the large cities of the United States, many of which lie within easy reach. In mentioning this matter to Ontario shippers, I have been assured by several experienced men that there is an excellent market for our best grades, but that we are in the unfortunate position of not being able to assemble these fancy grades in sufficient quantity to justify shipment to these markets. I feel very confident, however, that we have in Ontario a class of fruit which is unsurpassed on this continent and since the highest prices for choice fruits are obtained in the cities referred to, it seems to me, it would be well worth while to connect up with these markets.

As to united effort on the part of the growers, there is obviously great need for co-operation if the industry is to be revived. I am inclined to think, however, that the present tendency towards large orchards is the correct one and that the large orchard would enjoy the advantage of being able to market independently. Most of our best growers are far enough from market to feel the necessity of co-operative action, and fully realize, no doubt, that strong co-operation societies are the life of apple production in Ontario. I am afraid however, that the time has gone by when we can advise the owners of small orchards to give much attention to them even under best conditions of organization.

Speaking before some Niagara Peninsula fruit growers, Prof. L. Caesar, Provincial Entomologist, stated recently that the average fruit grower does not appreciate the importance of obtaining a high proportion of good fruit and an increase in his yield. Were growers to neglect their orchards for five years, in the matter of spraying, pruning, and cultivating, at the end of that period half of their trees would be dead, and the other half not much better excepting possibly sour cherries and some varieties of pears, through the work of the San Jose scale and other pests.

British Columbia

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

THE yield of British Columbia orchards this year, especially in the Okanagan country, is heavy. It is still early to predict the value of the crops, but it is well established that it will be well above the 1917 total.

Fruit shipments from the Okanagan Valley have greatly exceeded all previous estimates. These statistics will show to what extent the returns have increased over those of last year, and over the early estimates, the 1917 figures being quoted first, then the estimates and then the actual number of packages sent out:

Cherries, 14,628; 20,038; 41,770.

Apricots, 13,244; 28,850; 40,286.

Peaches, 52,754; 89,868; 142,494.

Plums, 41,552; 66,062; 97,440.

Prunes, 55,730; 78,056; 117,012.

These figures show an all-round increase. Cherry and apricot production of 1917 was almost tripled. Peaches, British Columbia's outstanding bumper crop of 1918, were produced in quantities almost three to one in comparison with last year. Plum production was doubled, as was also the case with prunes.

In making his last report, J. A. Grant, British Columbia's Fruit Commissioner in the prairies, says:

"In order to control the recurring difficulties in marketing we should know our competitors in a friendly way and adopt the solutions they have found as a remedy, and where the problems are unsolved to join with them in seeking the solution. We urge organization, not only in districts but as a province. We must present a united front and a clear case when confronting powerfully organized companies seeking reasonable concessions. Time and a little money must be spent in getting together; the weak must be built up by the strong. If producers of fruit and vegetables in British Columbia do not organize they cannot succeed in getting the cost of production for their wares. Producers to be strong must be well paid for their work. Enough to live on is not sufficient; we need a reserve or margin of safety to build up assembling plants and storage, to meet the needs of a growing industry. At our rate of growth we must look for a wider market for our fancy stuff. These markets are plentiful, and are supplied by organized peoples. We are by far too cheese-paring in expenditure on the things that matter. We need good service and must pay for it. Farmers should forget their little troubles in order to cope with the big ones. When the big ones are set right, the small ones will fall into line. Our progress has been good, and our output increases by leaps and bounds. We feel sure that our growers and shippers will not fail to measure up to the situation confronting them."

The big frostproof warehouse which is being built by members of the Vernon Fruit Union, under the name of the Vernon Storage Company, is now well under way. This building is said to be the largest of its kind in the west on either side of the line. It is 400x80 feet in area, with a basement the full size of the building. Hollow tile is the construction material. The structure will accommodate about 250 cars of apples for winter storage.

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61 FIRST PRIZES were awarded at the Montreal Horticultural Exhibition, September, 1918, to Mr. F. S. Watson on products grown from Dupuy & Ferguson's seeds.

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POULTRY YARD

Making the Hens Pay

Cull the flock closely and early so as to get them well settled before winter, and feed a good generous ration. The following ration and method of feeding have given satisfaction:

Scratch feed, composed of two parts corn, one part feed wheat and one part oats, is fed in a deep litter morning and evening: Dry mash of two parts bran, two parts shorts, two parts cornmeal, half part gluten, half part oil cake and one part fine beefscrap in hoppers all the time. Green feed: Roots, mangels preferred, or sprouted oats at noon; also either green cut bone in the proportion of a half ounce per hen per day or moist mash, or these may be fed alternately.

When sour milk is available a supply is kept constantly before the flock and the green bone may be omitted. Grit, oyster shell, charcoal and beefscrap are also kept in hoppers, and a supply of water is at hand.

The need to keep up production is very apparent—so apparent in fact that not one pullet that is capable of profitable production should be slaughtered. At the same time it would be well to remember that word profitable. There will be undoubtedly a strong demand for all the new laid eggs that can be produced, but that is no reason why poultrymen should produce eggs if they cost more than they will bring.

CULL THE HENS CLOSELY. Do not keep over a lot of old wasters. It is rarely that a hen over two years old—especially in the heavier breeds—will produce eggs profitably.

In order to lay well, a bird must have a sound body. It must be vigorous and healthy. This is indicated by bright, clear eyes, a well-set body, a comparatively active disposition and a good circulation.

Steps to Success

1. Keep accurate records. Little progress can be made without this first step. The average monthly and yearly egg-production, cost of feed and income from the flock should be known.

2. Feed a properly balanced ration. Such a ration furnishes nutrients for growth, maintenance, fattening and eggs. The production of eggs must be a constant aim.

3. Give proper care and comfort by good housing and management. Discomforts are: Extremes of heat and cold, hunger and thirst, foul air and dampness, and diseases and parasites.

4. Keep standard-bred, utility stock. There are five good breeds. Plymouth Rock, Rhode Island Red, Leghorn, Wyandotte and Orpington. Varieties of these have been bred for heavy egg-production. There are other good breeds for those who prefer them.

5. Breed from the best, both male and female. There are many signs of vigor and high production.

6. Sell unprofitable stock.

7. Market graded products. Maximum returns are secured from graded products.

These seven steps will lead to success.

Kill the Mites

Do you want a good home-made lice powder for your chickens? Then mix three parts gasoline and one part crude carbolic acid and as much plaster of Paris as the liquids will moisten; allow the material to dry for a few hours and then place the powder in air-tight containers. The powder

should not be mixed or placed near a flame. It is necessary to hold the fowl while dusting and care should be taken to work the dust into the feathers thoroughly. Ten pounds of the mixture will treat 520 mature birds.

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Annapolis Valley Notes

Eunice Buchanan.

WITH the embargo removed, shippers are hoping to get apples on to the Christmas market in England. However, things are uncertain, but hopeful. There has been a demand for apples locally. No. 1 Kings have made \$5 a barrel. The evaporators and canning factories are taking quantities. The Waterville Canning Factory employs 36 people, who are able to put 800 bbls. of apples weekly into gallon cases. Last year the Government bought the entire output.

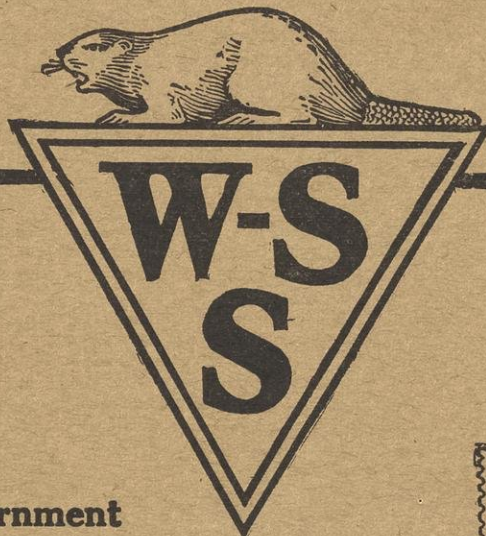
The work for November has been the general rounding up of the season's work, and

making things snug for winter. At the time of writing there are still some turnips out. The zebra caterpillars did not appear in numbers to injure them this fall. We have been shovelling earth around the young trees to protect them from mice, which are plentiful this year.

After the snowstorm on October 18th the weather was ideal for getting in belated crops and hauling apples. Many farmers have been down with the Spanish influenza, but their neighbors have not failed them. On November 14th a heavy, damp snowstorm fell. The wet snow clung to the telephone and telegraph wires in such masses that the damage can hardly be estimated. In driving between Waterville and Berwick we counted seventy telephone poles down

or damaged in about four miles. Numbers of wires were snapped. For a time traveling became difficult, owing to the heavy roads, and the steering over and under telephone wires. A very heavy rain fell on November 18th all day; this added to the fall of snow, has caused considerable floods.

The highest award for strawberry production in Creston Valley for 1918 goes to Joe Wigen, a Wynndel grower, with an official showing of 770 crates shipped from one acre under cultivation. None of these sold for less than \$3 a crate. A remarkable showing in raspberries is made by W. A. McMutrie, a Creston rancher, who had 117 crates off one-seventh of an acre. These also sold for more than \$3.



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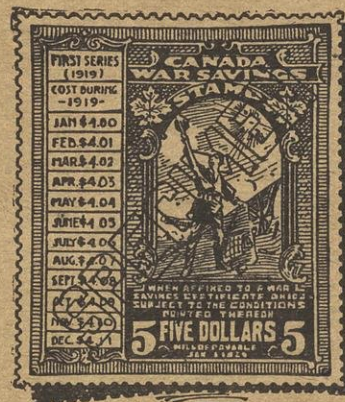
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Niagara District Notes

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

SEPTEMBER was a cold, wet, cheerless month in the fruit belt; indeed, there were only about two warm days during the entire month, but October and November have made ample amends for the shortcomings of September. Not in years have we had a nicer fall for accomplishing all kinds of outdoor work. The season continued open till late with little or no serious frost, consequently, both tomatoes and grapes had a long ripening season, and this added materially to the amount harvested in good condition.

Grapes really ripened this year and were sweet and pleasant to the taste, a great contrast to last season. The crop, however, was on the whole a light one, most vineyards turning out barely a basket (6 quart) to the vine, whereas it is not uncommon for them to turn out two baskets per vine, or even more. The price, however, made up in great degree for the short crop, from \$60 to \$80 per ton being paid for whole vineyards by the grape juice, canning and jam factories, many of whom had jam contracts with the British and American Governments. In the open markets of Hamilton and Toronto from 40 to 65c was paid per small basket.

The price of nearly all fruit has been more in accordance with war conditions than any year since war was declared, and on the whole growers have done fairly well. A few, however, had almost a total crop failure, and they have been badly hit. Most fruit was clean and free from disease, although apples were quite wormy where spraying was at all neglected.

Plums were a pretty good crop of excellent quality, which brought better prices than for years. Pears were light, except Bartlett's and Keiffer's. The former were a good half crop and fetched from 75c to \$1.25. The latter were about an average crop and brought varying prices. The canning factories contracted a number of them at 3 to 4 cents per lb. early in the season; later on, however, they bought them much cheaper than that. In the Hamilton market they ranged from 35 to 65 cents per large basket.

The peach crop was very variable. Some had little or nothing, others a light crop, and some quite a good crop. Prices were excellent, running from 85c to \$1.50 per large basket. As I write (November 28th) the season is still open and some are busy plowing. Many, however, are finished, and the orchards present a neat, tidy appearance. The tractor has been quite a feature

in the fruit orchards this season, and has been a great help to such growers as availed themselves of it. More and more fruit growers are purchasing tractors. Some of the large orchards in the vicinity of Winona could never have been cultivated properly without the tractor, but with its help they



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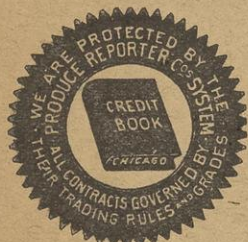
OUR facilities enable us to realize top prices at all times for your fruit, vegetables or general produce. Aside from our large connection on the Toronto Market, we have established branch warehouses with competent men in charge at Sudbury, North Bay, Cobalt, Cochrane and Porcupine. In time of congestion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

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

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H. PETERS
88 Front St. East, Toronto

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



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presented a better appearance than they have for some years. A tractor drawing two disk harrows, each set to throw different ways, and a drag harrow following, soon makes good work in an orchard.

The season was very favorable for the help question. Not for many years has fruit been so easily picked and harvested. All the local people turned out to help, and many old and middle aged people found that they could do a good day's work still. A number of university and high school lads were employed and gave good satisfaction. Around Winona not as many National Service girls were employed as last year, many of the growers thinking that they were too exacting in their demands. In the early part of the season, however, a large number of them were employed in the jam factory. Further east, however, at Grimsby, Jordan, etc., a good many of the National Service girls were employed, and appeared to give fairly good satisfaction. The apple crop has turned out fairly well in this section. Fall apples, Snows and Greenings were the best. There was also a fair sprinkling of Baldwins and Russets. Spys were decidedly scarce.

For the past few years the fruit growers of this district have been decidedly up against it, and some have become discouraged. But I feel certain that those who stay with the game will again, in a few years, reap abundant profits once more. The Ontario public will awake some day—not so very far distant—and find that there is a fruit famine in several lines. To those who are willing to give the best of care to their trees, etc., now, it appears to me, is an excellent time to plant plums, pears, peaches, or apples.

There is a good future for small fruits also, provided the picker question can be satisfactorily arranged, as indeed is likely in the not far distant future, now that the war is over. The prices of materials will also be sure to come down although there is no immediate appearance of it. The price of baskets, for example, is higher than ever, \$90 per thousand for old style, and as high as \$102 for the new standard 11-quart.

The future of grapes is at present a little uncertain. Should the manufacture of native wine be rigidly prohibited it will undoubtedly have a decidedly prejudicial effect on the grape industry. Grape juice has never been popular with the Canadian people. For one thing our warm season is too short, and it is only a warm weather drink. Another reason is that it is too insipid for the taste of many. Indeed I have heard some say that it is very little different in flavor from sweetened water.

The Girls' Service Battalion at Old Niagara has been doing excellent work in gathering up and preparing fruit, vegetables and chickens for our wounded soldiers overseas.

Mr. Bishop, a grocer in Old Niagara, is trying out a new experiment in the bleaching and making ready for market a large quantity of fine celery. To do this he has converted a section of the basement of his store into a celery bed, in which over 300 dozen plants are buried, while undergoing the bleaching process. Mr. Bishop intends placing this celery on sale during the winter and expects to supply the market at the time other celery, usually imported, is off the market, but still in good demand for table use, cooking, etc.

Some of the weather prophets have been indulging themselves with prophecies of an early and long, hard winter. So far, however, there is no indication of it—indeed, what signs there are appear to be in the reverse direction.

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21

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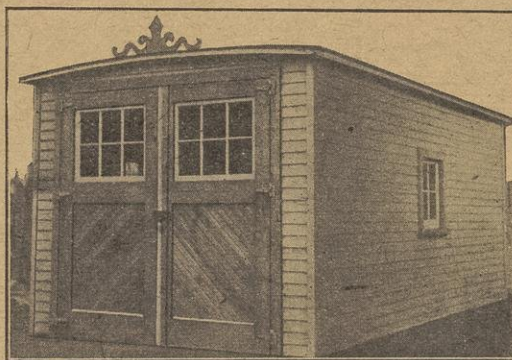
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A new song for the home, the school, the club. Music by Barclay Walker. Sent to any address on receipt of 15 cents.

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910 Merchants' Bank Bldg.,
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Production is pretty well over in the canning business now for the season, and, taken as a whole, the pack has been fairly satisfactory, although some lines are considerably below what was expected early in the season. Marketing conditions for canning products could scarcely be better. As a result most of the canning companies are getting on their feet again, whilst two or three years ago they were nearly all in a very shaky condition; indeed, it was only the formation of a holding company, embracing practically all the canning companies, that saved them.

Both apple picking and packing has been later than usual in this district, indeed packing is not finished yet of some of the larger orchards, although picking is. Buyers have been few this season, and many of the growers have packed their own apples. The canning factories and evaporators have been deluged with apples, so much so that the price, which started at \$1.00 per 100 lbs. has fallen to 50 and 60 cents. The ruling price of apples, Nos. 1 and 2, has been from \$3 to \$4 per barrel, excepting Snobs and Spys, which have run from \$5 to \$6. In consequence of the absence of buyers a considerable quantity of apples have gone to waste in the sections of country adjacent to the Niagara district. Conditions in the Province of Ontario generally seem to be more and more tending to the elimination of the small apple orchards, which will shortly have a great effect in diminishing the quantity of apples produced, although it may improve the general quality.

Towards the end of October grapes on the Buffalo markets were selling at from \$1.30 to \$1.50 per 12-quart basket, or from \$115 to \$135 per ton; apples, 50 cents to \$2 per bushel; quinces, \$2.75 to \$2.85 per bushel; and pears, \$2 to \$4.50 per bushel. These prices are a great contrast to those prevailing during the last two seasons, especially in the case of grapes. Apples, pears, and quinces do not show any great difference from local prices this side of the line. New pack tomatoes are quoted in a jobbing way at \$1.90 to \$1.95 per dozen, and sweet corn on a 35 per cent delivery at \$2.20 to \$2.25 in Ontario.

Prof. O. M. Morris, Professor of Horticulture at the Washington State College, states that where apples show any indication of water-core they should be gathered as soon as sufficiently mature. Although the fruit may be affected there is no damage to the tree, nor to succeeding crops. Fruit so af-

ected is unsatisfactory for either canning or evaporating.

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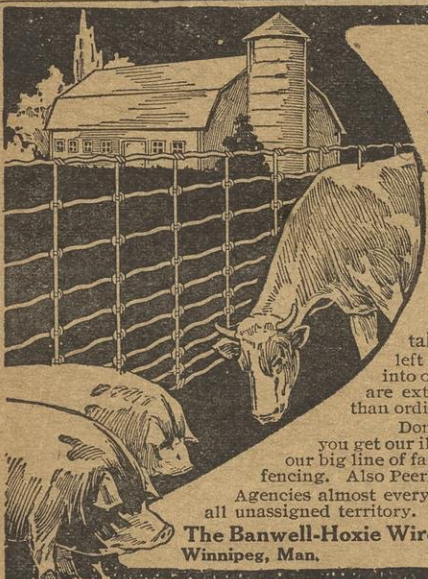
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King Apple

In Eden at the dawn of time,
To all the world's regret,
The apple tempted Mother Eve,
And lo! it tempts us yet,
As mellow King of Tompkins red,
And pippins, smooth, invite
The apple-lover passing by
To stop and take a bite.

The Greening and the Baldwin, too,
And rosy Northern Spy,
Bring thoughts of tasty apple-sauce,
And juicy apple-pie,
And apple-snow—a dainty dish—
And apple-jelly clear,
And apple-dumplings piping hot,
To all New England dear.

Last year a youth and maiden strolled,
Through orchards far from town,
He climbed a tree to shake for her
The last red apple down.
Now in a cosy city flat
In wedded bliss they bide,
But every night he carries home,
An apple to his bride.

The kiddie on the way to school
An apple likes to munch,
The workingman is glad to find
An apple in his lunch,
For lo! of all delicious fruits
The sunny seasons bring,
The peach, the plum, the grape, the pear,
The apple is the king.

—Minna Irving.

Fresh sweet cider and pasteurized cider are highly recommended as a health drink by eminent physicians and scientists. Sweet cider is a tonic as well as a nutrient, containing natural salts and acids of special value in the correction of stomach complaints and liver and kidney trouble. Pure, sweet cider can readily be made available as a delightful home beverage the year

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around and is far superior to the ordinary type of soft drinks. Chemical preservatives should be avoided, but pasteurizing to 160 degrees for two hours and sealing tight is effective for preventing fermentation.

Apple butter has long been a stand-by as a staple food and table delicacy and merits a place in the diet of every family. A favorite home recipe is as follows: Boil three gallons of apple cider down to one and one-half gallons. Pare and quarter sufficient apples to make three gallons. Pour over these sufficient additional cider to cover apples well. After cooking until tender run through colander then add the boiled cider and boil down to desired thickness. When nearly done add one and one-half pints sugar and when done flavor with one teaspoonful allspice and one teaspoonful cinnamon. For making apple butter on a large scale, a steam apple butter cooker should be used. It makes a butter with the right flavor quickly and with the least amount of labor.

A former editor of THE CANADIAN HORTICULTURIST, Mr. A. B. Cutting, B.S.A., who enlisted with the Canadian Forces some two years ago, and who has been overseas for about a year, has had some interesting experiences in France. Besides going over the top seven times in ten weeks Mr. Cutting's experience in horticulture has been called into use by the military forces. For some time he was used as instructor in horticulture at the Vimy Ridge School. He was offered a position on the staff, but declined it in order that he might obtain experience in the trenches. We are informed also that Mr. Cutting has been given openings to continue this kind of work in the schools for soldiers that have been opened in Great Britain by the Canadian Government.

I am a new subscriber to The Canadian Horticulturist and have obtained some very useful information from the first copy re-

ceived last month, and I will gladly put in a good word for The Canadian Horticulturist whenever an opportunity presents itself.—E. S. Huson, Ottawa, Ontario.

The Time to Act

Already in a number of Canadian cities returned war veterans have commenced the practice of decorating the graves of those victims of the great war who have been buried on this side of the ocean. This practice is destined to grow and shows that the proposal that has been made to establish a national Decoration Day in Canada is timely and one which is sure to meet with public approval. Decoration Day in the United States has been universally popular for many years. The sacrifices growing out of the great war of the manhood of the country should make a similar day equally popular in Canada. This situation affords a splendid opportunity for some of our national organizations, such as the men or women's Canadian Clubs or Daughters of the Empire, to launch a movement for the observance of a national Decoration Day in Canada.

The Glory of the Garden

"Our England is a garden, and such gardens are not made
By singing: 'Oh, how beautiful,' and sitting in the shade
While better men than we go out and start their working lives
At grubbing weeds from gravel paths with broken dinner knives.
"Then seek your job with thankfulness and work till further orders,
If it's only netting strawberries or killing slugs on borders;
And when your back stings, aching and your hands begin to harden,
You will find yourself a partner in the Glory of the Garden."
—Rudyard Kipling.

OVER 100,000,000 PEOPLE IN EUROPE FACE STARVATION

RELIABLE Experimental Station tests show that Fertilizers have increased yields of grain, potatoes, etc., from 25 per cent. to 130 per cent.

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Ontario Agricultural College, Guelph

Fruit Growing Course covers culture of tree and small fruits for amateur and commercial growers in all parts of the Province.

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Floriculture and Landscape Gardening Course gives instruction in the growing of plants and flowers for the home and the market, and in the choice, arrangement and planting of trees, shrubs and vines for home grounds, schools, parks, etc.

OTHER SHORT COURSES ARE

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Poultry Raising (4 Weeks)—Jan. 14th to Feb. 8th. Farm Power (2 Weeks)—Jan. 28th to Feb. 8th.

Bee Keeping (2 Weeks)—Jan. 14th to 25th. Factory Dairy Course (3 Mos.)—Jan. 2nd to Mar. 21st.

Farm Dairy Course (4 Weeks)—January 27th to February 21st.

Expenses—Railway fare, board and lodging while at Guelph.

An illustrated Short Course Calendar will be mailed on application

G. C. CREELMAN, President

A Christmas Suggestion



IF you are looking for a useful, economical and interesting way to remember your many friends this Christmas, what more thoughtful remembrance could you send than a year's subscription to THE CANADIAN HORTICULTURIST.

If they are interested in gardening, they would find the FLORAL EDITION an especially helpful method of securing the most up-to-date information and methods about growing flowers and vegetables.

Those who are interested in commercial fruit growing would find the FRUIT EDITION a valuable aid. It contains from month to month the very latest information on Canadian fruit-growing problems.

THE CANADIAN HORTICULTURIST going into the homes of your friends twelve times each year will prove a pleasing and lasting reminder of your thoughtfulness.

Let us send so that it will reach your friends Christmas morning, this artistic personal announcement card, which is tastefully embossed in the Christmas colors—green and red—telling them that their name has been entered upon the subscription list for one year as a Christmas remembrance. Imagine how it will prove a constant reminder of your thought and esteem for them. The following are our special offers:

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Christmas is nearly here, so send us, without delay, in accordance with any of the above offers, the names and addresses of your friends whom you wish to remember, together with your own name and address and remittance. (For subscriptions to the United States add 25 cents extra for postage.) Be sure to specify whether you wish the Fruit or Floral edition sent.

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