

to protect them from alternate freezing and thawing. The mulch is applied after the ground is frozen, and is drawn between the rows in the spring.

THE APIARY.

Convention of Ontario Beekeepers.

EDITOR "THE FARMER'S ADVOCATE":
The thirty-ninth annual convention of the Ontario Beekeepers' Association was held at the Carls-Rite Hotel, Toronto, on November 11, 12 and 13, 1919. Although the past season did not yield an average crop, the attendance was good. About three hundred Ontario beekeepers, together with those from Quebec and the United States, enjoyed a very practical and instructive program.

The President, James Armstrong, in his address referred to the growth of the membership, and the increased interest in beekeeping. Due to the heavy demand for Italian queens, and the prevalence and spread of European foulbrood, the speaker pointed out that a queen-rearing apiary, in charge of the Department at Guelph, was a necessity. At the present time the demand for Italian queens far exceeds the supply.

Professor J. E. Howitt, Ontario Agricultural College, Guelph, gave a very interesting lecture on "The Beekeeper's Part in Food Production." This lecture was illustrated by means of colored charts and slides; the structure of the flower was explained, and the process of the development of the seed and fruit demonstrated. Professor Howitt showed, that, with few exceptions, fruits develop better when the pollen from one variety comes in contact with the stigma of another variety. Many flowers develop in such a way that the male and female parts of the same blossom mature at different stages, so that the pollen from other blossoms must be carried from blossom to blossom in order that a large number may receive pollen and a fair crop of fruit result. From experiments conducted it has been shown that insects are the main carriers of pollen, and that in the case of most fruits the pollen is not carried by the wind. In the absence of insects in large numbers, the crops are materially decreased, and in some varieties there is no fruit.

In the case of alsike clover grown for seed, insects, and especially the honey bee, are almost vital to a good crop of seed. Where alsike blossoms were covered so that insects could not visit the blossom there was practically no seed, but uncovered blossoms in the same field and nearby developed a normal crop of seed. The speaker concluded by saying that the crop of honey produced might not be more valuable than the increased crops of fruit and some field crops grown for seed, largely the result of the work of the honey bee.

To many people, Northern Ontario would seem to be the last place where a good crop of honey might be secured, yet Wm. Agar, of Thornloe, showed that the bees had given him a crop of honey per colony, the equal of crops in the more southerly locations. The winters being very severe and long-continued, made it necessary to take extra care in preparing the bees for winter.

EFFECT OF POISONOUS SPRAYS ON BEES.

The question of the effects of spraying fruit trees, while in full blossom, with poisonous sprays has always been a live one from the beekeeper's viewpoint, and Professor L. Caesar showed that there had been much variation of opinion as to whether a colony of bees suffered serious loss from visiting blossoms sprayed with arsenical mixtures. In some cases poisoning was possible. The speaker, however, showed clearly that the fruit grower himself would almost always be the loser if spraying was carried out while the trees were in full blossom, and that with rare exceptions this was not good practice.

In the question of poisoned baits, these baits used largely in the control of grasshoppers were most effective early in the day, and by the time the bees were flying the baits had become dried to the stage where the bees would not touch them.

R. F. Holterman, a well-known commercial honey producer, outlined the steps necessary to become a successful honey producer. In the course of his address it was apparent that before one would expect to become successful in a commercial way, a course of apprenticeship was necessary. There were two or three ways of securing this experience; work with a few colonies; spend some time with a commercial beekeeper, or a combination of one of these together with a course in beekeeping at the Ontario Agricultural College. Although the honey stomach of the bee is very small, a certain amount of food was necessary at all times. Harry W. Jones, of Bedford, Que., outlined the various methods of feeding and the reasons for supplying the food. Stimulative feeding is resorted to in the spring to stimulate egg laying, and a consequent increase in the number of bees in the colony. In the fall it was necessary to feed so that the colony would not starve until nectar was secured the following spring.

C. B. Gooderham, of the Experimental Farm, Ottawa, outlined the various experiments which the Department was interested in, and the beekeepers should be able to secure some useful information as a result of these experiments.

One cannot possibly produce honey unless there is an abundance of nectar-secreting flora within flying distance of the bees. These facts were brought out in a valuable talk by J. L. Byer, of Markham. The necessity of first-hand knowledge of the soil and weather conditions were also very important factors in the production of profitable crops.

D. A. Davis, of Michigan, spoke on queens and queen-rearing. The simple methods were outlined and the reasons for the rearing of queens were given. Beekeepers are now realizing the value of the queen to such a degree that the demand has exceeded the supply. The information Mr. Davis gave was very timely and well received.

The following officers were elected for the ensuing year: President, W. W. Webster, Little Britain; First Vice-President, A. McTavish, Carleton Place; Second Vice-President, R. E. L. Harkness, Iroquois; Secretary-Treasurer, F. Eric Millen, O. A. C., Guelph. Directors: Jas. Armstrong, W. W. Webster, H. G. Sibbald, F. W. Krouse, E. T. Bainard, Jno. Chisholm, Jno. Newton, Jno. Myers, Wm. Couse, A. McTavish, R. E. L. Harkness and M. B. Holmes. Representatives to fairs: Toronto, J. D. Evans; Ottawa, M. B. Holmes; London, John Newton.

Ont. Agr. College, Guelph.

F. ERIC MILLEN,
Provincial Apiarist.

POULTRY.

Ridding the Flock of Mites.

Lice and mites annually retard production of poultry to an enormous extent in Canada. It is not necessary to go into the life history of these small and injurious parasites of poultry. The principal thing is to know how to prevent an infestation, and how to clear an infested house or flock. Lice and chicken mites are all repulsive to much the same line of control treatment. Lice may sometimes call for additional and special treatment, but in all cases light and clean surroundings are necessary.

Experienced investigators have told us that the most potent cause of the presence and increase of these parasites is filth, under which heading may be included droppings, decaying and decayed eggs, and bits of decayed materials of all kinds. Mites especially are found in great numbers in the filth that has sifted through the straw and that lies in the bottom, in the corners, and in the cracks of the nests. Lack of light is another important cause of the presence and increase of mites. The following paragraphs are taken from a bulletin published by Cornell University, and deal with the methods of clearing an infested poultry house of mites, and also of the necessity for a dust bath for hens.



Hon. D. Carmichael, M. C., D. S. O.

Minister without portfolio in the Ontario Cabinet, and the connecting link between the Government and the Hydro Commission.

"It often happens that a poultry house becomes infested with mites from floor to roof and in every nook and cranny. If the house is of the older type and not too valuable, it may be justifiable to burn it and build anew. In any case the perches and nests should be torn out, in order to facilitate the application of insecticides. The next thing to do is to clean the walls and floors by giving them a thorough sweeping. The inside of the house should then be sprayed with kerosene or crude petroleum. It is best to begin at a certain place and go over walls and floor with the oil, applying it with considerable force by means of a pump and not stopping until every square inch has been covered. The liquid should be forced into cracks and crevices between the boards. The oil will kill all the eggs that are hit, but some eggs will surely escape being touched. As it takes from four to five days for the eggs to hatch, the walls should be done over again in about a week in order to kill the young mites that appear in the meantime. In another week a third application may be necessary.

"If it is thought preferable, the kerosene or crude petroleum may be made into an emulsion diluted to ten or fifteen per cent., which will kill all the mites actually hit. The emulsion is made as follows: One-half pound of laundry soap or whale soap is shaved fine and dissolved in one gallon of water (wine measure is used in the U. S.—Editor.) The soap is best dissolved if the water is nearly or quite at the boiling point. When the soap is dissolved and the water is hot it is removed from the fire, two gallons of kerosene oil is added, and the

mixture is agitated or churned violently until a white, creamy emulsion is formed. The best way to produce the emulsion is to pump the liquid back into itself through the pump until the mixture becomes creamy. To make a ten per cent. emulsion, 17 gallons of water is added to the 3 gallons of stock mixture; to make a fifteen-per-cent. emulsion, 10½ gallons of water is added to the 3 gallons of stock mixture. It is advisable to follow the application of the oil to the walls of the house with a dusting of dry air-slaked lime 3 parts and sulphur one part. The windows and doors of the house should be closed and the lime-sulphur should be thrown up to the roof and against the walls until the air is full of the particles. The powder will gradually settle everywhere, much of it entering cracks and crevices.

DUST BATH FOR HENS.

"Rice says that 'a dust wallow is as essential to a fowl's health and happiness as a water bath is to the health of a human being.' It is a common thing to see hens and chickens wallow in dry dust. They make a hollow place in the ground to conform with the body, and in this they lie scratching with the feet, fluttering the wings, and elevating the feathers until they stand all fluffy and loose over the body. By scratching, the fowls loosen and pulverize the soil, which is worked down in among the feathers. This is not done wholly for pleasure, although the fowls apparently enjoy it; the fine dust is an excellent insecticide and aids in controlling mites and lice.

"There are days and seasons of the year when fowls cannot find dry, dusty places in which to wallow. Moreover, where fowls are kept in a pen or a yard they are not always able to find a satisfactory dust bath. In view of these factors a dust bath should be provided and made accessible at all times and seasons.

"The finer, lighter, and drier the dust, the more satisfactory it will be. Some kinds of light road dust are good; fine sandy loam is excellent. Whatever soil is used, it is well to lighten it by mixing it with finely-sifted coal ashes. It is also advantageous to add now and then small quantities of snuff, sulphur, or dry slaked lime, or all three of these.

"The box containing the dust should be set near a window, where the dust will be kept dry and warm and where the sunlight will reach it for a considerable part of the day. The mixture may be kept in an open box, but in this case the fowls that are not dusting are compelled more or less to inhale the particles of dust. Because of the dust's rising, it is of advantage to keep the fine soil in a covered box with a lid on top for easy filling; a small opening in one side of the box should be provided for the entrance of the fowls."

FARM BULLETIN.

Wheat Embargo Lifted by United States.

The United States Government will remove the wheat embargo, which will permit Canadian wheat to enter the United States and be bought and sold on their markets. The bars are to let down by the middle of December, in order that hard spring-wheat, such as No. 1 and No. 2 Northern, may be obtained, for there is a shortage of this grade in the United States. It is thought that Canada's present exportable surplus now amounts to about 50,000,000 bushels, and, as the Wheat Board are duty-bound to sell this on the highest market, much of it will probably go across the line where prices are higher than the Wheat Board have been obtaining. This will not affect Ontario wheat very much, since the United States market is not asking for this grade. However, as a result of the freer trading, markets will be broadened, thus creating a keener demand for winter wheat. The United States wheat market, it is believed, will materially strengthen the price of Canadian hard wheat.

O. A. C. Judging Team at Chicago.

Professor Wade Toole and his trained team of students, who are to compete in the Live-Stock Judging Competition at the International, on Saturday, November 29, left early this week for Chicago. They will have a work-out at some of the large live-stock breeding farms in Illinois, and will then return to Chicago for a day's rest in preparation for the ordeal on Saturday. The personnel of the judging team is as follows: W. C. Hopper, Ottawa; F. A. Wiggins, Kemptonville; George B. Hood, Guelph; S. W. King, Hickson; and R. G. Knox, Norwood. W. A. Fleming, of Nova Scotia, and A. H. Musgrave, of Toronto, are going as spares. The O. A. C. team won last year in the competition, and Prof. Toole says that he has just as good a team and perhaps better than last year. The competition promises to be exceedingly keen as several provinces of the Dominion will likely be represented and a large number of the States of the Union.

By-Elections on December 22.

It is necessary for the members of the Ontario Cabinet to be re-elected before they are finally confirmed in their Governmental positions, and the election day has been set for December 22. The nominations will take place on December 15.