

He had kept the germs for eighteen months, and when put on a suitable medium they had given a good growth. Six hours of direct sunlight on a bright summer day would kill them.

In Europe eucalyptus oil, creolin, and camphor gum have been fed to the bees in the food with some indication of success. He had tried these substances on the germs in various ways, and was satisfied that they would have no effect direct on the germs in a hive. He had not tried feeding these substances to bees where foul brood existed, because the law in Ontario is very stringent on this point, and all foul brood must be destroyed. It cannot be kept even for experimental purposes.

Professor Hunt reported on the work of the Horticultural Committee. Four leading varieties of strawberries (twelve plants each), four leading varieties (six plants each) of raspberries, black raspberries, blackberries, currants and gooseberries had been sent out to a number of experimenters throughout the province. So far returns were meagre, as it takes some time to get started. Some good reports from the strawberries have been sent in, and another year should show some good work.

Dr. Mills gave a short address on the experimental fruit stations throughout the province, with a word of explanation as to the special work each station was doing. In a few years a lot of useful information will be expected from these stations.

Mr. Macoun, from the Experimental Farm, Ottawa, gave an interesting talk on the experimental work as carried on at the farm. Just now they are getting ready the three-lb. samples of seed for distribution to farmers. The object in distributing this seed is to introduce new and valuable seed to the farmers, and only tried and proven varieties will be sent out. It enables the farmer to get a start in new varieties that he perhaps could not otherwise obtain. The three-pound package, if carefully handled, should yield from one hundred to one hundred and twenty pounds of seed from the first sowing.

Mr. Macoun is specially interested in forestry. He is surprised that more is not done to ornament the homes of our country by planting trees and shrubs. He believed the home should be made as attractive as possible, and that this would help to keep the boys on the farm. He strongly urged the ex-students to take up the work of forestry and set the example in this respect. An interesting discussion followed Mr. Macoun's talk.

Mr. L. G. Jarvis gave an instructive talk on "Dressing and Shipping Poultry." He made a strong protest against selling diseased fowl. He had a number of cross-bred fowl nicely dressed on the table beside him, and thus gave a practical illustration of what he was talking about.

Mr. W. R. Graham, Bayside, led the discussion on Mr. Jarvis' paper, and threw out a number of very valuable pointers for poultry men. Mr. Graham spoke in a convincing way, and showed that he knew what he was talking about.

Mr. Thos. A. Duff, Toronto, then gave a short humorous address. He couldn't understand why poultry questions always seemed to amuse an

audience at Farmers' Institute meetings, because it was one of the best paying industries in the country. It deserved more attention on the part of the farmer. He maintained that hens without a male bird running with them would lay seventeen per cent. more eggs.

Mr. J. E. Meyer, Kossuth, also spoke on the poultry business. This discussion brought the programme to an end, and the meeting was closed.

FRUIT GROWERS' CONVENTION.

The thirty-seventh annual meeting of the Ontario Fruit Growers' Association, was held in the town of Waterloo, December 15th and 16th. The attendance was only fair, but the meetings were very interesting and exceedingly profitable.

The report of the treasurer was presented, and showed a balance on hand of \$262.00.

A discussion then followed on promising new varieties that were worthy of being more extensively grown, also of old varieties that might be discarded for better varieties. A lively discussion took place over the value of the Keifer pear. Quite a number declared it to be a good pear, especially for canning. The Japan plums came in for a share of the discussion, and were generally recommended. Several growers said the Japan plums were inclined to grow late in the fall the year they were planted, but that the second year they would ripen their wood at the proper time. The Abundance and Wickson varieties were well spoken of. Prof. Taft, of Michigan, thought the Wickson a most promising variety, it was large and of good quality, and was one of a dozen that they thought worthy of more extensive cultivation.

Mr. W. M. Orr's report on experiments in spraying fruit trees was a most instructive one. Experiments were conducted in twenty-nine orchards, in twenty-three counties. The Bordeaux mixture was generally used. This is: copper sulphate, four pounds, fresh lime, four pounds; and water, forty gallons. To this was added, four ounces of Paris green for the Codling moth. The attendance at the meetings amounted to nearly 3,000, which is 60 per cent. better than last year, correspondence was ten times greater, showing that a much greater interest was taken in the subject.

The results attained were very satisfactory, in some cases the full 100 per cent. being obtained, in others the results were not as good because of rain falling immediately after the spraying was done. As showing the benefits of spraying Mr. Warner's orchard, at Trenton, is a good sample. The percentage of clean fruit is as follows:

	Sprayed.	Unsprayed.
Northern Spy	76	8
Snow	75	0
Wealthy	90	20
Baldwin	90	10

The spraying of twenty-five trees in Mr. Warner's orchard increased the value of the fruit to the extent of \$100. In another place sprayed Maiden's Blush sold for \$4.00, and unsprayed for 75c. a barrel. Spraying certainly increases the percentage of clean fruit, the specimens are also larger, brighter, better flavored, and of superior keeping qualities. Cost of spraying is about two cents per tree.

Prof. Fletcher said 90 per cent. of the spraying that was done was not done as it should be. To be successful a nozzle was required that would make a fine spray. Many of them made coarse spray that did not answer. There was a difference between spraying and drenching a tree. We must give more attention to spraying. Some men say they have no time for spraying. In answer, he said, you may just as well say you have no time to make money. Spraying only costs a few cents a tree, and as illustrating the profits, in addition to the one given above, he gave another. A man sprayed twenty-nine trees, and it was worth to him this year \$75.00. The simple reason why so many people will not spray their trees is that they are lazy. There is no danger of poisoning the apples if the spraying is done at the proper time. The apple cannot absorb the arsenic of the Paris green. Anyway, if the poison was absorbed it would quickly destroy the apple. If there were any arsenic on the outside of the fruit it is in so small a quantity that it cannot be seen with the naked eye, a good lens would be required to see it. The statement made by some people that the buyers will not buy the fruit if they know it to be sprayed is only an excuse to cover laziness.

The Nominating Committee made their report just before the morning session broke up, and the officers for the ensuing year are: President, W. E. Wellington, Toronto; vice president, W. M. Orr, Fruitland; Sec.-Treas., L. Woolverton, Grimsby. Directors: Division 1, W. A. Whitney, Iroquois; 2, R. B. Whyte, Ottawa; 3, Geo. Nicol, Kingston; 4, W. Boulter, Picton; 5, Thos. Beall, Lindsay; 6, E. C. Beeman, Newcastle; 7, M. Pettit, Winona; 8, A. M. Smith, St. Catharines; 9, J. S. Scarff, Woodstock; 10, J. A. Morton, Wingham; 11, T. H. Race, Mitchell; 12, A. McNeil, Windsor; 13, G. C. Caston, Craighurst. Auditors: A. H. Pettit, Grimsby; Geo. E. Fisher, Burlington.

The discussion of Mr. Orr's paper was continued at the afternoon session. Spraying during the winter was advisable, or then all the spores on the twigs could be destroyed. It can be done any time during the winter when most convenient, but the best time is towards spring, when the vitality of the tree is reviving.

Professor Taft, of Michigan, strongly advised spraying during the winter, for during the summer new leaves are constantly coming out, and spraying would need to be done constantly to keep all the leaves sprayed. He recommended spraying the gooseberry for mildew three or more times; first, before growth started, use copper sulphate solution then; second, when the leaves were half opened out; and third, when the fruit was set. The latter applications should be the Bordeaux mixture.

Mr. J. Tweedle reported an experiment, the object of which was to ascertain if a cold rain had any effect on the setting of fruit if it occurred when the trees were in flower. Parts of trees that were in bloom were sprayed, or rather, drenched with as cold water as he could get, at different times, for three days. He found no difference in the amount of fruit that set.

The balance of the afternoon session was taken up with the reports of the

trial shipments of fruit to the English market. Mr. L. Woolverton made the first report. He explained the plan followed in making the trial shipments, and gave the results and lessons drawn from the season's trade. On the whole the results have been very satisfactory, and lessons have been learned that will make it possible to ship next season with much greater success. One thing they did find out, and that is, that it will not be profitable to ship second grade goods to England.

Mr. Geo. E. Fisher, of Burlington, told how the Burlington people had made shipments on their own account, of the difficulties they had met with, and the lessons they had learned. He very strongly recommended cooling all fruit before packing it. He picked and packed fruit in the morning until the day began to get warm, then he quit packing it and spread out all the fruit picked the rest of the day in a cooling room that he had built. Here it remained and cooled over night, and was packed the next morning along with the early picking. He believed that a large share of his success in shipping this year was due to this treatment, and to a well ventilated shipping case. The Burlington people had made more money out of their shipments to England than out of those sent to Montreal. Mr. Fisher showed a new plan for strengthening packing cases without disfiguring them. His plan was to lay in a strip of hoop iron on the end pieces before the sides were nailed on; this prevented the ends from splitting and allowing the case to fall to pieces, as the sides were often of two pieces.

Prof. Robertson said that there had been some complaint from fruitmen that they could not get their fruit into the cold storage chambers on the boats, and that butter was always given the preference. He explained that the contract with the steamship companies was that butter was to have the preference. This was because at the time the contract was made butter was the only article that was asking for cold storage. The government had reserved space for two car-loads of trial shipments of other substances, and a portion of this could have been obtained had application been made for it. He had himself ordered American butter out of the cold storage compartment and put in a consignment of Burlington fruit.

He explained the cause of failure in a number of shipments and explained how they were remedied. A better ventilated case was wanted. He explained what the government proposed to do next season, and threw out a number of suggestions in regard to the export trade of tender fruits. Grapes were practically given away. An interesting experiment was tried on one hotel table. Canadian grapes were placed on the table, the first day those who tasted them spit them out and left them. Fresh grapes were supplied every day, and before a week was over they were all eaten up clean. It will take time to establish the demand for our grapes.

A most profitable discussion followed on the best manner of packing and on packing cases. Prof. Robertson showed several California packing cases also some French returnable wicker ones.

There was a very large attendance