while in Canadian (Ontario and Quebec) apples it was 60 per cent. N.S. orchards produce larger and better fruit and the grower does his own packing. One N.S. grower realized 3.58 per bbl. net in his orchard. He sprays 5 times a year and packs his own fruit. Canadian fruit was worse this year than last.

In closing, Prof. Robertson made a number of suggestions, which if carried into effect should improve matters greatly. These were as follows:—(1) An officially recognized standard of apples—standard of size, standard of quality in regard to shape and freedom from blemishes, and a standard of variety. (2) There should be some regulation that should compel the branding of the name of the packer and grower on every barrel. (3) Then when any fruit is sent to an outside market that is not what it is branded, it should be confiscated or some sufficient penalty meted out to the guilty party. We could have realized fully $1,225,000 more for our fruit this year, had it all been good. If inferior fruit is produced it will find a market somewhere, and will be a temptation to get rid of it by dishonest means.

A committee was appointed to consider Prof. Robertson's suggestions and present a report.

Mr. M. Pettit, Winona, presented a report on the San Jose scale. The efforts put forth by the Government to stamp out the scale had been in a large measure effective. He moved a resolution, which was carried by the convention, expressing satisfaction with the Government's efforts to destroy the scale, and regretting that the work has been discontinued for a time. It recommended that there be no relaxation, and that in cases where an owner has a lot of slightly infected trees he should have the option of having them destroyed or treated with a view to eradicating the pest, and that all nursery stock should be treated with cyanide of potassium gas before it is sent out.

Mr. W. M. Orr presented his report on spraying for 1899. Work was done at 30 points with three agents on the road from the 3rd of April to the middle of July. The attendance was larger, and there was more interest shown in the work than ever. Systematic spraying was being taken up all over the country. There were cases where sprayed fruit had arrived in England in good condition, while unsprayed fruit was wet and slack. The average Ontario yield of apples was 8,000,000 bbls. which might be increased one-third by proper spraying.

W. T. McCoun, Horticultural Central Experimental Farm, Ottawa, presented a report on some work done in spraying with whitewash to prevent winter fruit budding. The spraying mixture consisted of skim-milk 6 gals., water 24 gals., and unslacked lime 60 lbs. The results showed that spraying with this lengthened the time of budding. The retarding of the swelling of the buds was largely noticeable on sprayed trees. This work will be continued next year.

Dr. Saunders, director of Experimental Farms, exhibited some new varities of apples believed to be hardy enough to stand the climate of the Northwest. They were produced by cross-fertilization of hardy Siberian wild crab apples with the best hardy apples under cultivation in the east. The original crab apple is about the size of a respectable gooseberry, but the new hybrids are perhaps an inch and a half in diameter, and the professor hopes to greatly improve on them.

At the evening session, A. W. Campbell, Toronto, spoke on good roads for fruit growers, and Dr. Saunders on "Preparations for a display of Canadian fruits at the Paris Exposition." There was little change in the officers for 1900 W. M. Orr, Fruitland, was elected president, and G. C Caston, Craighurst, vice president.

Ontario Beekeepers

The annual convention of Ontario Beekeepers took place at the Albion Hotel, Toronto, on December 5, 6, and 7. There was a good attendance and the various sections of the province were well represented. Most of the papers read, though of a technical nature, were full of interest to beekeepers. Mr. W. J. Brown, Chard, Ontario, presided. In his address he pointed out that the past season had been a very unfavorable one and scores of beekeepers had been forced to feed their bees in order that they might have sufficient stores to winter upon. One of the questions to come before the meeting was the proposed purchase of the *Canadian Bee Journal* and the preparation of an exhibit for the Paris Exposition. The season had been such a bad one that there was some doubt as to whether a sufficient supply of good quality could be secured. He would not recommend sending an exhibit to a foreign country that would not do justice to the industry.

Papers were read on "The Spring Management of the Apiary," by D. White, Bethesda; "Bee Keepers' Associations, their Past, Present, and Future," by W. Z. Hutchison Flint; "Marketing Extracted Honey," by H. Sibbald, Cooksville; "Management in Extracting Honey," by M. B. Holmes, Athens; "Methods of Bee Keeping," by G. E. Saunders, Hornby, and others. Prof. Robertson, Ottawa, addressed the gathering on the markets local and export for honey. He pointed out the field there was in England for Canadian honey and urged care in the preparation and packing of the article. A discussion took place on the law regulating the spraying of fruit trees, led by John Newton, Thamesford. The law forbids the use of any mixture containing Paris green or any other poisonous substance in spraying, but Mr. Newton contended that the law was neglected, in consequence of which beekeepers suffered loss. It was felt by others who took part in the discussion that the law was not generally known, and it was suggested that the association distribute generally copies of the law. Another suggestion was that the law should be posted in all the post-offices through the province.

Cattle Foods*

By H. Smith, Hay, Ont.

There are two very different opinions held as to what constitutes cattle food. One of these is that only such feed as there can be no other use made of, such as straw and hay too badly damaged to sell, can be profitably used as cattle food. I suppose that a small return can generally be got from passing these feeds through cattle. But a majority of farmers believe that they can profitably devote a considerable part of their farms to the growth of crops especially for stock feed. It is to introduce this subject for discussion that this short paper was prepared.

Before taking up the different crops that I think are most suitable for cattle food in this section, it might be well to consider for a short time the qualities that foods should possess to make them valuable for stock feed.

First of all, they must contain the elements that the animal's digestion can convert into the different parts of its own body.

At first thought this would seem to be all that was required, and a good many writers on the science of stock-feeding seem to think it is all that is necessary. Another quality that I think of almost equal importance is palatability. A cattle beast to thrive requires a full stomach; but unless the feed is appetizing it will not fill itself to the required extent. This virtue can generally be much improved by good management. Try to get the hay well saved. What oat-straw you expect to feed cut on the green side. Have the grain feed sound and free from mustiness. Cutting and mixing make quite an improvement in this respect. In England, molasses are often used to make the food more appetizing. Keep the feed mangers perfectly clean. An animal will no more take a good fill from a foul manger than you can eat a good dinner amid dirty and disagreeable surroundings. Then, healthfulness is another important quality. Something green, such as roots or ensilage, help

* A synopsis of an address prepared for Farmers' Institutes in Ontario, condensed for publication by the Superintendent.