0

ee It

in

le id

ie 🦃

THE TARMER'S ADVOCATE

to a moth, and escaped, leaving the body of additional the convention Prof. Dechlorof, or diredonald College, explained that what a cortain particular and by a single brood is that a certain particular lar insect will not complete the cycle of its existence and pass through a generation more than than the one he had been using. Contrary to the once in the twelvemonth. An insect that has two broods a year is one that completes its cycle of a spray up with force, rather than a very fine existence and passes through two generations within a year. There are two broads of codling moth in some parts of Ontario, but the dates when they pass through their successive stages are affected by seasonal conditions; and, moreover, the insects of a brood will not all pass the same stage at one time. In fact, the two broods may to a certain extent overlap each other, thus giving the appearance of continuous brood ng.

A further ray of light was shed on this vexing subject by Prof. M. B. Waite, Pathologist of the U. S. Department of Agriculture, who remarked, incidentally, in the course of his evening address, that his co-worker, Prof. Quaintance, in charge of the Entomological Branch of the U.S. Department, had lately established the fact that some of the injury commonly supposed to be due to late broods of the codling moth was really caused by another insect, called the plum moth, which makes a comparatively shallow hole into the apple.

IRRESPONSIBLE APPLE BUYERS.

The subject, "Commercial Spraying of the Apple Orchard," was handled briefly by a number of speakers. Mack Smith, an apple buyer, who is also interested in orcharding, remarked that apple buyers are about the biggest pack of suckers in the world. They start in July and chase and worry a farmer to death to buy his apple crop. After the orchard is contracted, the farmer has insufficient or no interest in how it turns out. He believed there were a larger percentage of irresponsible apple buyers than of any other class of business men. The Old Country financiers who back them were understood to be shutting down on these men. If they were shut down harder it would be a good thing for the industry, as they would then inspect more closely and buy better fruit. The speaker asserted that an acre of good apples, if properly attended and looked after. would produce as much as any other ten acres on the ordinary farm.

COMMERCIAL SPRAYING.

Coming to his subject, Mr. Smith named four important pests of the orchard for which spraying San Jose scale, codling moth, was necessary: oyster-shell bark-louse and fungus. The codling moth he considered the greatest evil, and the easiest to handle. He has practiced banding his trees, and also spraying. Formerly he had been disgusted with spraying for the moth, but hearing an address by Jas. E. Johnson, of Simcoe, he was impressed by it, and resolved to follow this method. Mr. Johnson advocated three sprayings (1) Before the buds had swollen; (2) after the buds had swollen; (3) just as the blossoms dropped. Mr. Smith in his practice had omitted one of the early sprayings, but gave two thorough ones this year. In 1906 and 1907 his orchard had been sprayed by a commercial sprayer, a man who made a business of it. This year the owner super-intended it himself. As for results, he instanced his Ribstons. In 1906 he packed 44% firsts, 35% seconds, and had 19% culls; in 1907 he had 29% firsts, 24% seconds, 37% thirds, and 10% culls; in 1908, 80% firsts, 20% seconds, and practically no culls; in fact, there were not half a dozen bushels of culls in the carload, and, moreover, it was the finest car of Ribstons he had ever packed. Johnson advocates only three spravings, and uses an excess of bluestone and lime, insecticide he uses both Paris green and white arsenic along with the Bordeaux. Emphasis is laid on spraying just after the blossom falls, while the young fruits are still erect and the little sepals at the blossom end are standing out forming a little basin. The idea is to fill that little basin in the blossom end with a poison, so that it will be ready there when the moth goes to lay her egg. Now, in the case of Mr. Smith's Ribstons this one spraying alone insured freedom from codling moth, but in his Baldwins, Spies and Greenings he had quite a few wormy apples, and was inclined to think one or two later sprayings were necessary to cope with the later brood, and he also thought it important to use some more powerful insecticide than Paris green. Travelling extensively through New York State, he had found arsenate of lead being used. The arsenate was still to be seen adhering to the fruit, and did not readily wash off. Next year he proposes to spray four times, and possibly five: (1) During the dormant season for fungus; (2) as buds are opening; (3) as blossoms drop; (4) when apples are size of marbles, and if the season proves hot and dry, would spray a fifth time, using arsenate of lead. He anticipated no danger of disfiguring the apples, and would use about 4 pounds arsenate of

D. Johnson, of Forest, Ont.. in a very practical lead to 100 gallons water. address, repeated his experience in spraying, but as this is familiar to our readers, we need not go into details. In their district they have been using the regular Bordeaux formula, and it has

ed ad. characteristic results, orchards which were at the search with worms and intested with search and few hard the last with very little scab and few Long E. Johnson's process, he had used Jas. E. Johnson's wither, and was it quite as well, if not better, a spray up with force, rather than a very fine mistlike spray, as recommended by the orthodox. The spray must be strong enough to reach the tops of the trees.

Growges are too much inclined to leave spraying to their hired help, who seldom look after it as it should be done, said Jas. E. Johnson, the man who has been the means of revolutionizing orchard practice in Norfolk Co., Ont., and whose spraying formula and instructions have been followed with marked success by quite a few orchardists over the Province. Before spraying, study what you are to spray for; secondly, study how



Apples Grown on Tree Sprayed with Homemade Lime-Sulphur Mixture.

Note that fruit is clear and free from scale.

to control those specific fungous or insect pests, and then spray thoroughly at the right time. The precise stage at which the spraying is done is one of the greatest secrets. A day's delay may in some cases mean the ruination of a crop; occasionally, if the first opportunity is not taken advantage of, rain may delay the work for days. Some growers undertake to spray too large an orchard with a single outfit. With one ordinary hand pump he would not attempt to spray over 10 or 12 acres. A power outfit might, perhaps, handle 15. If an orchardist has larger areas than these, he had tetter have two or more pumps.

TUSSOCK MOTH IN ORCHARDS.

Mr. Johnson has been in the habit of spraying three times: first in the dormant season for fungus, second for the bud moth, and the third time especially for the codling moth. A fourth now seems necessary to combat the tussock moth, which gave them considerable trouble in their district last year. In reply to a question, Prof. Lochhead informed the audience that the tussock

could not always be relied upon, and in such cases the arsenic supplied a double chance of accomplishing the work. In using this combination he had simply followed the formula as he had obtained it in New York State, and from it he had had excellent results.

To show the importance of spraying at the right time, the speaker stated that this year one orchard sprayed a week late had 75% of apples affected with the codling moth, while in the other not 2% were affected. As soon as the petals fall get the calyx end of the young fruit filled with spray mixture.

OYSTER-SHELL BARK-LOUSE.

Will spraying for San Jose scale kill the oystershell bark-louse, was a question voiced by G. C. Caston, in reply to which A. M. Brown, of Wyoming, Delaware, asserted positively that lime-sulphur washes applied for San Jose will destroy the oyster-shell bark-louse.

A resolution passed at a later session, requesting that the Yellows and Black-knot Act of Ontario be amended, by including the disease known as little peach. It was also proposed that legislation be enacted making spraying compulsory for the codling moth.

Over the rest of the programme we may pass lightly, reserving many of the papers and discussions for subsequent use, when they will be more seasonable, and when space will permit their use more in extenso. Prof. Wm. Lochhead gave three papers-one on the apple maggot, one on the blister-leaf mites, and a third on the black canker. The handling of the strawberry plantation was treated in an address by S. H. Rittenhouse, Jordan Harbor, Ont., and discussed by a number of other experienced growers. Prof. R. Harcourt, O.A.C., Guelph, addressed the association on "Observations on the Use of Fertilizers in German Orchards." While the Germans do not pretend to have arrived at such definite conclusions regarding the use of fertilizers in orchards as in grain and other crops, owing to the length of time it requires to conduct experiments with trees, still they are devoting themselves to a conscientious study of the problem. Meantime, fertilizers are quite largely employed by German fruit-growers. Prof. Harcourt's lecture will be given in full.

Prevalent fungous diseases of Ontario orchards were discussed in a lengthy but very instructive limelight-illustrated address by Prof. M. B. Waite, Pathologist, U. S. Department of Agriculture. The information given in this address also will be published later in our columns; likewise the open discussion on commercial status of our standard varieties of fruits, and the address of Prof. Chas. F. Wilson, of Cornell University, Ithaca, N. Y., on "Results of Orchard Surveys in New York State."

TENDER FRUITS SHIPPED IN COLD STORAGE TO BRITAIN.

J. A. Ruddick, Dairy and Cold-storage Commissioner, Ottawa, addressed the convention on the shipment of early apples and tender fruits to It was conceded that there was Great Britain.

a large market in Britain for our early apples, pears and peaches, if landed in good con-The action of the Dodition. minion Department of Agriculture in undertaking to guarantee to certain steamship companies payment for space in cold-storage chambers, to be given up wholly to shipments of fruit, had resulted in some experimental shipments this year, and, while the prices d had not been very satisfactory to the growers, it was encouraging to note that the fruit arrived in fine condition, and the receivers were very well satisfied. Every consignee but one who reported on the matter at all emphasized the importance of packing dessert apples in boxes, and recommended the wrapping of very early apples. Mr. Ruddick read considerable correspondence ex-

pressing approval of the fruit, and offering various Among others he read a letter, suggestions. written October 13th, in which the statement was made that as English and French peaches were then practically finished, Canadians arriving after that date should make satisfactory sales. dicate the possibilities of the British fruit market, he referred to a correspondent who spoke of peaches retailed at 10 cents apiece. After that he could easily understand the astonishment of the members of the Scottish Agricultural Commission, when offered all the peaches they could eat while visiting in the Niagara District.

SPRAYS FOR SAN JOSE SCALE.

A feature of the Wednesday afternoon session were the "Observations on Fruit Conditions," by several of the District Representatives of the Provincial Department of Agriculture. A. McKenney,



Apples Grown on Tree Sprayed with V1. Solution.

Showing scale on the fruit.

moth caterpillar hatches out in May, and remains in the caterpillar stage until about the middle of In the western part of the Province it is earlier than in the east. From observations in New York State, Mr. Johnson feared it was going to be a hard pest to fight. It appears to begin eating the young foliage, and following that up gnaws into the apples, some fruit showing only a slight scar and some quite a defacement. ing for this would appear to be necessary about two or three weeks after the blossoms fall.

BOTH ARSENIC AND PARIS GREEN

Mr. Johnson then described his spray formulæ For the codling moth he uses 1 pound white arsenic, 3 pounds sal soda, and 1 pound Paris green to 250 gallons water, combined with the Bordeaux mixture. The idea of using both arsenic and Paris green he could not explain, except on and racis green the quality of the Paris green B. S. A., of Essex, took the opportunity of dis-