

which causes numerous destructive cankers on the smaller branches and twigs. The spores of this disease spread in the autumn and germinate during or shortly after the fall rains. Therefore to prevent their germination the plant pathologists recommend that the trees be sprayed about the time these rains are due, which seems to be early in October, and again as soon as the leaves fall or the crop is off. We have no Apple Anthracnose disease in Ontario. It is believed that the earlier of these applications helps to prevent fresh attacks of apple scab in autumn, but it is not claimed by such a reliable authority as Prof. Cordley, of Oregon, that this alone will control apple scab for the rest of the season. He practises the same spring and summer sprayings as we do.

Thus, the main reason for fall spraying in the west, does not exist in Ontario. We should, moreover, remember that the climate of the Pacific coast is much different from ours, and what may be necessary there may not be either necessary or desirable here. No harm, of course, could come from fall spraying in Ontario and anyone desiring to test it is running no risk. It certainly destroys many of the insects that a spring application would kill, and where an orchard is badly infested with Blister Mite or San Jose Scale or Oyster-shell Scale, it could be practised with much benefit until these were brought under control, but its proper place, in my opinion, is to supplement in this way and not to displace the early spring application. The proper mixture to use is lime-sulphur of the ordinary spring strength, without any arsenate of lead.

We should not forget that any system of spraying can be made more effective by proper pruning of trees and by careful cultivation of the orchard in the early part of the season, followed by a cover crop to prepare the wood for winter. These things help to make the trees themselves healthy, and allow a free circulation of air and plenty of sunlight, all of which are important in the control of insects and diseases. The destruction of fallen fruit by hauling it to the evaporator or in any other way, is one of the best things that can be practised if we want clean apples.

Locating Little Peach

A Niagara district fruit grower wrote recently to the United States Department of Agriculture at Washington to find if it is possible to determine the presence of little peach on trees planted out last year. In its reply the department states it is possible, though the identification would not be very positive. The difficulties in a positive identification come from the presence of other diseases, such as the black peach aphid, cod worms on the

roots, borers, sour soil, nitrogen starvation and other weaknesses. If none of these troubles are present, or, if upon examination one can make reasonably certain of their absence, then the little peach cases stand out pretty clear.

"We have," writes the pathologist, Mr. M. B. Waite, "used the buds from trees affected with little peach more than the one-year nursery trees which show the symptoms a little but not very decidedly. These were transplanted on to rich ground here at Washington, where they developed the symptoms, though in rather moderate degree, during the first year's growth in the orchard. The trees lived along for several years, becoming more and more marked. This is equally true of peach yellows. Of course to be absolutely positive one would perhaps have to wait for the fruit, as the leaf symptoms of little peach are somewhat similar to yellows, and not always easily distinguished from the symptoms caused by the other diseases named."

Apple Packing in British Columbia*

In British Columbia every man owns his own packing house. When the pickers are started in the morning one man goes down with a load of boxes, scattering them along the trees as he goes. On his return he picks up the filled ones, takes them to the storehouse and returns and comes back with another load of empty ones. By this means there is no waste time.

The apples are picked in galvanized iron buckets with canvas bottoms. The bottom is held together with a drawstring which is loosened and the apples come out the bottom of the bucket, thus preventing any bruising. Low truck wagons are used for drawing the apples to the storehouse. The apples are graded in three grades—culls, fancy, and choice.

No man is allowed to pack his own apples. The packer who is sent by the association is sole judge of what should go in the box. In this way the grower has nothing to say about the grading, and to this factor is very largely due the high reputation of British Columbia apples for their uniform grade.

The organization of the Hood River Apple Growers has increased the price of the apples to \$2.10 per box f.o.b. The price has not been less the last five or six years. The apples are sold f.o.b. station. The association formerly advertised for buyers, but now each grower estimates his yield and signs up his association for his entire crop. Last year 80,000 boxes were sold to one man. The stamp on the boxes guarantees the Hood River reputation, wherever the

*Extracts from an address given at the Guelph Agricultural College Short Course by Mr. A. B. Campbell.

apples are eaten. The association gives an absolute guarantee that every box or package is honestly packed.

The number of apples in the boxes vary according to the size of the apples from one hundred to one hundred and fifty. A car will hold six hundred and forty boxes. Everything that goes east is wrapped in paper. The spring in the box amounts to a half or three-quarters of an inch on both the top and bottom. Experience has shown that the best pack is where the stem comes immediately above the calyx of the apple below. In this case the paper forms a cushion between the apples.

Many eastern people obtain a wrong impression of the apple when they see the exhibition packed boxes. The growers estimate that an exhibition will cost them from fifty cents to seventy-five cents each, while the regular rate paid the packers for putting up the commercial boxes is seventy-five cents apiece. Mr. Campbell produced eight thousand boxes, of which seventy-five per cent. were fancy, the balance choice, with the exception of about seventy-five boxes.

DEFINITION OF GRADES

The grades are as follow: Fancy, seventy per cent, good color, free from blemishes, no fungus, good shape; choice, two fungus spots, or two stings, not open, are allowed, no limit in color. Mr. Campbell obtained by spraying three times an almost perfect crop of apples, as only one-tenth of one per cent. were graded as culls.

The trees were sprayed three times: Once in the fall, as soon as the apples were picked, with the Bordeaux mixture, 6-6-50. In the spring they were again sprayed with the same application, and then again with lime-sulphur and three pounds of lead arsenate to the barrel of the mixture.

PACKING

On British Columbia apple ranches, everything moves like clockwork. The apples are brought in to well lighted sheds and emptied out on a packing table, four feet wide by six feet long. Four packers are at each table and sort the different sizes out at the same time. By this means there is much less bruising than there is where a less number are working and where the different sizes are not all packed at the same time. The packers are held responsible for the work, and are paid thirty-five cents an hour and their board. The grower gets the entire produce of the apples, with the exception of ten cents a box, which is deducted to pay expenses.

In grapes I grow the Concord and Niagara, and spray twice with Bordeaux to prevent the rot.—L. Wolverton, Grimsby, Ont.