

some good men behind it, and may come to something. The air is full of co-operation and central packing, and we may get it soon.

Yield.—This is looked upon by most men as a banner year, both in quantity and quality. Some of the varieties are averaging much higher than usual, while others are lighter in yield. Kings, Northern Spy and Golden Russet are among the former, while the latter class contains such as the Nonpareil and Baldwin. R. J. MESSENGER.
Annapolis Co., N. S.

COMMERCIAL FRUIT-GROWING IN WESTERN NEW YORK.

Paper by Willard Hopkins, Youngstown, N.Y., read before the Ontario Fruit-growers' Association, November, 1907.

The subject of commercial fruit-growing in Western New York will be confined principally to the Niagara frontier, and to my own personal experience. Living on the banks of the Niagara District, as I do, where our principal fruit orchards are located, and owning a fruit farm on the Canadian side of the river, I feel a personal interest in the prosperity of the fruit-growing industry of Canada.

THIRTY YEARS' EXPERIENCE AS A FRUIT-GROWER.

About thirty years ago I began planting commercial orchards, and have continued to plant and replant ever since, until I have now upward of 300 acres under cultivation, consisting of apples, pears, quinces, plums, prunes, peaches, and cherries. Beginning with the latter, we have almost a continuous gathering of fruit until the last of the apples are harvested. We have trolley cars running through the orchard, with New York Central connections, so we can ship to any part of the country.

In planting the eighty acres of apple orchard, thirty years ago, I made the error of planting almost exclusively the late-bearing varieties, Baldwins and Greenings; consequently, I had to wait twenty years for a remunerative crop. Had I planted Duchess, Hubbardston, Wealthy, and other early-bearing varieties, I should have gotten returns in less than half the time. The quince orchard, of about 1,200 trees, planted thirty years since, has borne almost yearly crops since six years old. The present year it gave us over 600 barrels, selling for \$1,500. It has been necessary to spray them at least three times through the season to prevent the black spot on leaf and fruit. The soil is a dark surface and heavy clay subsoil. I have scarcely used any fertilizer in this orchard. We have about 10,000 pear trees growing, principally Bartlett, Kieffer and Duchess, of various ages, and often gather 3,000 barrels of fruit, which is taken readily by home and export trade. The Bartletts usually go into cold-storage twenty-four hours after gathering. Well do I remember, before the advent of cold-storage for Bartlett pears, when the ordinary life of the fruit was about a week after gathering, seeing selected Bartletts offered on the Buffalo markets for seventy-five cents a barrel. Now, with present facilities for handling them, we get from three to five dollars a barrel. We endeavor to give our pear orchards clean cultivation, and spray them two or three times with Bordeaux mixture. We try to go through the orchards once in ten days and cut out the blight in seasons when it is bad.

Our plums are principally Niagaras, Lombards,

Coe's Golden Drop; and the prunes, the Fellenburg variety. We never fail in having a crop of some variety, and frequently of all varieties. The plums are largely used by local canning factories, and the prunes go to Pittsburg, New York and Philadelphia. They are also given two or three sprays of Bordeaux. In our early experience with prunes, they would make quite a growth up to the last of July, then the fungus would ruin the leaves, which would drop off, and afterwards start a new set of leaves in September, and the trees would go into the winter in bad shape. Since spraying, they and the Lombard plums carry a rank foliage all through the season.



Willard Hopkins, Youngstown, N. Y.

A portion of the land occupied by our peach orchard of twenty acres has been growing peaches for the past seventy years, with scarcely any time elapsing between the removing of the old orchards and the planting of new ones. Nine years ago we removed an old orchard, principally Early Crawford, that was badly infested with the "yellows" and "little peach." We cultivated the land one year, and the following spring planted it to Reeve's Favorite, Elbertas and Late Crawford, and it has borne abundantly for five consecutive years. The sales from this orchard of twenty acres the present year were upwards of \$9,000, exclusive of packages or commission. This orchard, now eight years planted, was examined by Government inspectors this season, who found less than twenty trees with yellows or "little peach." We endeavor to keep our peach trees headed back so they can be picked from a six-foot ladder. One cannot be too careful in selecting varieties for planting. Take the Longhurst, or Hill's Chili, for instance, which succeed well on warm, early land, but on ordinary land are absolutely worthless. The Late Crawford and some other varieties which succeed so well with us on the lake shore, are subject to fungous troubles, and are often shy bearers. In planting peaches, as well as other fruits, study your lo-

cality and conditions well, and get the benefit of others' successes and failures.

Within three miles of this orchard, on either side of the river, there are a number of farms of 100 acres each, portions of which are well adapted to fruit-growing, that the sales from the entire farm would not amount to the returns from an individual acre of this orchard. The owners are living principally upon scenery.

SAN JOSE SCALE, AND HOW IT WAS COMBATED.

About four years ago the San Jose scale appeared in our orchards, coming from an infestation in Niagara-on-the-Lake, four miles away. They thought it had been carried by birds, particularly crows, which made their nests in our large apple orchards. At first we received very little practical assistance from our experiment stations, either at home or in Canada. I often think of the crude way your inspectors and experimenters, Messrs. Fisher and Haley, were preparing the sulphur-lime-and-salt wash on a cold day in the last of March, in an old iron kettle, and testing the effects of it on a few trees in the garden. We concluded that if we had to apply that preparation to our 300 acres of orchards, we would surrender. But we established an experiment station of our own, using whale-oil soap, sulphur and lime, and crude-oil emulsion, and have got to using Pennsylvania crude oil in our large apple orchards, put on just as the buds open, with the finest nozzle. This treatment we recommend as a last resort when the trees have been badly neglected. Ordinarily, we find crude-oil emulsion, prepared by putting thirty or forty gallons of water in spraying tank, then put in twelve or fifteen pounds of whale-oil or other soap, and boil until soap is dissolved; then pump fifty gallons of oil into the tank, keeping the steam turned in to the tank all the time; then fill tank to two hundred gallons, keeping agitator going all the time. We use this emulsion one year, and if not comparatively free from scale, follow the second year with sulphur and lime. We removed the upper story from our thirty-year-old apple orchard, and now find comparatively little difficulty in reaching the tops of the trees with the spray, standing on an elevated platform on the wagon.

We use sulphur and lime on our peaches, pears, and most varieties of plums and prunes. In our various orchards we have 3, 8 or 10 horse-power boilers, with elevated vats for cooking the sulphur and lime and emulsion, and use four power-sprayers and two hand-sprayers.

With modern means of applying these remedies, is it not surprising that hundreds and thousands of acres of apple orchards in Western New York and in Ontario, between Hamilton and Niagara River, are being abandoned? In many districts you have scarcely enough apples to supply home demand and canning factories, let alone any for export. There has always been great fear among small-fruit growers that soon there would be an overproduction and no remunerative market, as in 1896, when fine apples sold from fifty to seventy-five cents a barrel, and other fruits in proportion.

This San Jose scale should allay your fears on that score. While orchards that are infested with all other pests may survive and be reasonably productive with careless or no cultivation or spraying for years, these untreated, scaly orchards are fit for the brush-pile in from two to five years. One might as well hope to grow



Preparing the Lime-sulphur Mixture on Mr. Hopkins' Farm.

A 10-h.-p. boiler, with steam pump to pump the water into the two elevated vats, in which there are steam pipes for cooking 200 gallons of mixture.



Power Spraying in Mr. Hopkins' Orchards.

A 250-gallon tank, with 2-h.-p. gasoline engine to apply, with a pressure of 100 to 140 pounds. Two horses are used on the outfit.