on June 12th, the same day as orchard No. 4, because it was infested chiefly with the same species of fly. No later application was given.

RESULTS.—The one spraying did not control the pest as nearly 25 per cent. of the cherries, when picked, were wormy. The owner, however, said that the spraying had done a great deal of good. It was observed, moreover that the maggots were for the most part small, as if the earlier flies had been killed and the eggs had been laid by those that emerged later after the poison had been washed off by heavy rains. Several other cases were reported of fruit-growers who tried to control flies in badly infested orchards with one application and failed. It is evident, therefore, that two applications are essential unless no rain falls to wash the first off.

Check Orchards in 1914.—As already mentioned it was thought wise to use as checks, orchards that had been severely or moderately infested the previous year and that could in no way be affected by the mixture in the sprayed orchards. Two such orchards not far from St. Catharines were chosen, one with about fifty Montmorency trees twelve years or more of age, and the other with about seventy larger trees of the same variety. Both species of flies were present in these orchards though the White-banded was the more abundant. Females were frequently observed ovipositing, and at picking time careful observations showed that over 85 per cent. of the cherries in the former were wormy and an average of about 50 per cent. in the other. A few trees in the latter had almost every cherry infested. There was no reason except the spraying why there should have been more or even as many wormy cherries in these orchards as in Nos. 3 and 4 because as stated, 3 and 4 had been selected the previous year as the worst infested orchards seen in Niagara. There can, therefore, be not the least doubt that it was the spraying that made the difference.

CAGE EXPERIMENTS WITH SPRAYS IN 1914.

Cage No. 4.— This cage contained a tree, one-half of the foliage of which was sprayed with arsenate of lead at the rate of three pounds to forty gallons water, without any molasses. The other half was left unsprayed. On June 22nd forty-six freshly emerged flies were placed in the cage and supplied with water on dry days by throwing a little over the top of the cage.

RESULTS.—In eight days all the flies but one were dead. This one died soon after. This showed that even where they had a chance to avoid the poison the flies ate it and were destroyed.

Cage No. 5.—The tree in this cage had half the foliage sprayed with lime-sulphur (strength 1.010 sp. gr.) and the regular amount of arsenate of lead without molasses. The remainder of the leaves was unsprayed. On June 17th thirty-eight freshly emerged flies were placed in the cage and forty-six more on June 22nd.

RESULTS.—Many of the flies died in the first twelve days but a few continued to live for a month, though no eggs were laid. This would indicate that though the flies may have begun to feed on the lime-sulphur and arsenate of lead, some of them stopped doing so before they had taken enough to kill them. It is difficult to explain why the mixture should have prevented egg-laying for in all other large cages in which flies lived so long a considerable number of eggs were laid. This experiment makes it doubtful whether it is wise to add a fungicide to the poison the first year of treating a severely infested orchard.