

other orchards were to the south, east, or west of these, but to the north were several similar small ones, the nearest being 15 rods or so away. These orchards had also been badly attacked the previous year and were now left unsprayed as a check. Between these checks and the two sprayed orchards mentioned as being situated on the one side of the road, were a hedge and building which served to isolate them fairly well. The other sprayed orchard on the opposite side was not so well isolated, having no barrier between it and the checks. The result of the spraying was that the two orchards most isolated had over 96 p.c. of the apples on all varieties, including such susceptible ones as Tolman, Snow and Wealthy, free from egg punctures. The orchard on the other side of the road was not quite so clean, some of the Tolmans having as high as 25 p.c. of the apples punctured, though most of these had only one or two punctures each. In the check orchards on both sides of the road the Tolman, Wealthy, Snow and St. Lawrence had from 75 p.c. to 99 p.c. of the fruit with egg punctures, most of the apples having each many punctures.

*Experiment 6.* In 1917 these same three orchards were resprayed, this time with 2 to 3 lbs. arsenate of lead to 40 gals. of water without the addition of any molasses. As the season was very wet in July three applications instead of two were given to all except the summer varieties such as Duchess and Yellow Transparent. In addition, all trees in the nearest part of the check block were sprayed once in order to afford the test orchards some protection. The results were excellent: for in the most isolated orchard the fruit was all free from injury, and in the second best isolated orchard only a dozen apples on a Baxter tree had been punctured. (These egg punctures could all have been made in a single day by one female.) The third orchard in which some of the Tolmans in the previous year had as many as 25 p.c. of punctured fruit was almost as clean as the other two, not more than three score apples being affected, and these having each only one or two punctures. The check trees were not so badly infested as the previous year, though Snows, Wealthy, and St. Lawrence, and a seedling variety, had almost every apple attacked. (The Tolmans in the checks had no crop this year.)

*Experiment 7.* At Trenton this same year, 1917, an old isolated orchard of about thirty trees which had been badly infested in 1916 was heavily sprayed twice with arsenate of lead and water. Here, too, the result was that the fruit was almost entirely free from injury, only one dozen apples being found with any egg punctures. There was no check for this orchard.

*Experiment 8.* In the autumn of 1917 the worst infested orchard the writers had seen was found near Brighton. There were approximately 300 trees in it. The varieties were chiefly Ben Davis and Wealthy, with several Snow, one Yellow Bellflower, two or three Golden Russets, one St. Lawrence, one Tolman and a few other varieties. There had been a moderate crop that year, but every apple seen had been so badly attacked by the Apple Maggot as to be worthless and most of them had been left on the ground to rot. This would naturally give an ideal opportunity for a great number of flies to be present the next year, and thus for a thorough and final test of the poison spray. Accordingly arrangements were made whereby the entire spraying, including that for Apple Seab and Codling Moth, was taken in charge. Five sprays in all were given, namely, the dormant or semi-dormant spray, the spray just before the blossoms opened, the one just after the blossoms fell and then two more for the Apple Maggot itself. The first of these Apple Maggot applications was on July 12th and 13th, just as the first flies began to appear and the second the first week in August.