

whole. In fact, in several counties the insect was found only in apples growing in towns and villages, places where the conditions seem to be specially favorable for its existence.

#### FOOD PLANTS.

In Ontario the Apple Maggot has been found infesting only the fruit of apples, crab apples, and a few of the many species of haws. In parts of the United States\* a fruit fly seemingly identical with it except in being smaller has been bred from huckleberries and blueberries. In British Columbia† a similar insect is common in the fruit of snowberry. However, as neither of these insects, according to present knowledge, will breed in apple, there is some doubt as to whether they are really the same species as the Apple Maggot. This doubt is strengthened by the fact that the adults of the blueberry-huckleberry form and of the snowberry insect are very timid and difficult to capture even with a net, whereas the adults of the apple species are sluggish and may be readily captured with a cyanide bottle without the aid of a net.

#### COMPARATIVE DEGREE OF SUSCEPTIBILITY TO ATTACK OF THE DIFFERENT VARIETIES OF APPLES AND CRABS.

Any person who examines a moderately-infested orchard will readily discover that some varieties of apples are much worse attacked by the Apple Maggot than others. This is so commonly true that those who are familiar with the insect's habits, when seeking to discover whether it is present in any particular orchard, always ask to be shown certain varieties such as Early Harvest, Sweet Bough, Gravenstein, Snow, Wealthy, Alexander, Tolman or Spy, because they know that these are among the insect's favorites, and that if it is in the orchard at all it will be found on some of these.

In seasons when there is not a great number of flies these or other favorite varieties may be the only ones attacked, or the only ones at all severely attacked, but in seasons when the flies are very abundant almost every variety will have many apples infested, while not a single fruit may escape on the favorite varieties. The only varieties that have been exempt from attack in the orchards under observation were the Arctic and Stone, but as these were found only in moderately-infested orchards it is no proof that in the case of a badly-infested orchard they would escape.

It is worth mentioning that in the early part of the season the insects usually confine their attention to their favourite earlier varieties; then as the season advances and these become nearly ripe, they attack the later ones. For instance, a Snow apple and an unnamed early fall apple were situated side by side. At first the fruit on the Snow was uninfested, whereas the flies were readily observed ovipositing on the fruit of the other tree and numerous egg punctures could be seen. A week or two later the flies became common on the Snow fruit and it became just as badly punctured as the other, almost every apple being attacked. Tolman Sweet is a variety very subject to attack, yet many eggs will be laid in early varieties before oviposition begins on it.

The following table gives the result of the writers' observations upon the degree to which the different varieties of apples and crabs are subject to attack. It does not include all varieties grown in Ontario, but only those found in the orchards studied.

\*Woods W. C.—Maine Agr. Exp. Sta. Bul. 244, pp. 252-266.

†Downes, W.—Can. Ent., Vol. LI, No. 1, pp. 2-4, Jan., 1919