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INSECTS INJURIOUS TO ORCHARDS.

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It has been estimated that the annual loss to farm crops in Canada from the ravages of insect pests is somewhere in the neighbourhood of $45,000,000. It is therefore obvious that every practical orchardist should be acquainted with the most improved methods of combating his insect foes. In order to intelligently apply such remedies, however, it is necessary for him to know a little about the insects themselves, and something of their structure and life-history.

A little observation will show whether an insect is injurious, neutral, or whether actually beneficial. Many of this latter class, including lady-bird beetles, which prey upon plant-lice, are among the best friends the farmer has.

A knowledge of the structure of insects is essential, for upon this depends, to a very large extent, the methods adopted for their control. For this purpose, insects are divided into two main classes: (1) Sucking-insects, and (2) biting-insects.

To the sucking-insects belong the aphides, leaf-hoppers, mealy-bugs, etc., whose mouth-parts are modified into a long sucking-tube, which pierces beneath the skin of the food-plant and sucks up the juices within. Stomach-poisons would, of course, be of no avail against insects of this class, and consequently some material must be applied that will kill them by contact. All insects breathe through tiny openings in the sides of their bodies. It is the object of the contact sprays to plug up these openings, enclose them in a film, or else to destroy the insects by means of the caustic action upon their bodies.

Biting-insects include all those forms that chew and swallow their food. The various leaf-eating caterpillars belong to this class. As these insects actually take portions of the food-plant into their systems, they can be controlled by the use of stomach-poisons, like lead-arsenate. Soft-bodied biting-insects may sometimes be destroyed by the use of contact sprays.

A knowledge of the life-history of any insect pest is necessary in order to tell at what period in its life it can be most readily, or cheaply, controlled. Insects, in the course of their development, pass through the following stages:—

(1.) The first is the egg stage, during which the insect is usually invulnerable to attack, but during which some kinds may be successfully treated.

(2.) The egg hatches into what is known as a larva. If the adult insect is a fly, the larva is called a maggot; if a moth or butterfly, a caterpillar;