

LIVES OF INSECTS.

The lives of insects are divided into four well marked stages. These are: (1) the egg; (2) the larva (caterpillar grub or maggot), during which, as a rule, they are most injurious; (3) the pupa or chrysalis, in which, except in a few orders, they do not feed, and are, as a rule, without the power of locomotion; and (4) the perfect insect. Although most insects are injurious in one or two stages, only some are destructive in all three of their active stages. It therefore becomes important to learn their appearance and habits from the time the eggs are laid until the whole life history is completed, so that no opportunity of destroying them may be lost.

Biting and Sucking Insects.—All insects may be divided into two large classes, by the nature of their mouth parts. In the first or larger division, Biting Insects, they are furnished with mandibles or biting jaws, by means of which they consume the substance of their food, as in the case of caterpillars, beetles, grasshoppers, etc. In the second class, Sucking Insects, they have, instead of mandibles, a beak or tube by means of which they suck up their food in a liquid form from beneath the surface, as in the case of the true bugs, plant-lice, scale insects, mosquitoes etc.

CHAPTER II.—REMEDIES.

NATURE OF ATTACK.

When insects are observed to be injuring a crop an examination should at once be made to discover the nature of the injury, so as to decide upon the proper remedy. It is plain that with Biting Insects, which bite off and swallow parts of the plant attacked, all that is necessary is to place upon the food plant some poisonous substance which will not injure the plant, but which being eaten by the insects attacking it, will kill them. With Sucking Insects, however, this treatment would be useless, for they would push their beaks through the poisonous covering on the outside of the food plant, and would with impunity suck up the sap upon which they live, from beneath the surface. For Sucking Insects, therefore, some substance must be used which will kill by mere contact with their bodies, or by suffocating them.

For nearly all the kinds of injurious insects which attack our staple crops, we have now good practical remedies; and all that is necessary for the farmer or gardener who sees that his crops are being injured by insects is to write at once to the Division of Entomology, at the Central Experimental Farm, Ottawa, stating plainly what the trouble is, and, whenever possible, sending specimens for examination. In most cases, useful advice can be sent back at