

ON THE CODLIN MOTH, (*CARPOCAPSA
POMONELLA.*)

By HIS HONOR MR. JUSTICE DOBSON.

[Read 11th April, 1876.]

For some years past the apple orchards in the northern parts of this colony have almost ceased to be productive. Every grower of apples there knows how liable his fruit is to be worm-eaten ; he finds basketsful of windfalls even in the calmest weather, and he is aware that the cause of the loss is a small grub which has fed upon the pulp of the fruit. The ravages of this insect are not wholly confined to the apple, but have in some cases extended to crops of pears. This grub has made its appearance in some of the gardens in the vicinity of Hobart Town ; it is said to have been observed here three years ago, and up to the present time it has not been the cause of loss to any serious extent in the Southern orchards. The history of these grubs, and how and when they get into the apple may not be generally known. The grub precisely answers in description, and in the mischief it does amongst the apple orchards, to the Codlin grub of England and America, and although it is impossible at this season of the year to obtain the moth there can be little doubt that it is, if not identical with, at least most closely allied to the Codlin Moth, and I have for the purposes of this paper assumed it to be so. The grub is the larva of the Codlin Moth, "*Carpocapsa pomonella*" of some entomologists, but "*Tinea pomonella*," "*Pyralis pomona*," and "*Tortrix pomoniana*" of others. The Moth is about three-quarters of an inch in expanse ; its forewings are ashy brown, the hind wings are a reddish brown, tinged with yellow. The moth lays its eggs in the eyes of the young apples—one egg in each apple—by inserting its long ovipositor between the divisions of the calyx. As soon as the egg is hatched, the little grub gnaws a hole in the crown of the apple, and soon buries itself in the substance. The grub itself is of a dirty-white colour, with a brown head varied with darkish-brown marks. The body is slightly hairy : the first segment after the head is whitish, with minute brown spots ; the other segments are of a pale colour, with about eight small tubercles on each. Each of the anterior segments is furnished with a pair of legs ; and there are a pair of feet at the extremity of the body. In its early state it is of a dirty-reddish colour. The grub chiefly feeds upon the pulpy parts of the apple. When it

has nearly attained its full size it feeds on the pips of the apple, which, thus attacked in its most vital part, soon falls to the ground. On the fall of the apple the grub quits the fruit by the passage which it has previously gnawed. A hundred fallen apples may be opened and not more than two or three grubs found within them: the orifice by which they have escaped being open and no longer concealed by the little mass of brown grains, which is the case with those apples from which the grub has not made its escape. These little grains are the excrement of the grub. On leaving the apple after its fall the grub or caterpillar wanders about the ground till it finds the stem of a tree, up which it climbs, and hides itself in some small crack in the bark. It gnaws away the bark a little, and having made a smooth chamber, spins a little milk-white silken case, in which, after a few weeks, it becomes a chrysalis. In this state it remains through the winter, and, in the northern hemisphere, till the following June;—In Tasmania, probably till the end of November, and is to be seen early in December hovering round the apples on a midsummer evening. The exit of the grub and its wandering to a place of safety are said usually to take place in the night. It is evident from the habits of the insects that their destruction is attended with great difficulties. The presence of the grub in the fruit is unknown till the little brown excrementitious grains appear on the exterior of the apple, at the orifice of the tunnel which the grub bores from the core through the pulp to the surface, and the mischief is then accomplished. The small size of the moth, its nocturnal habits, and its practice of secreting itself in crevices of the bark render its destruction most difficult. The only known means of preventing the spread of this pest appear to be—1. To gather up the worm-eaten fruit as soon as it falls, and before the grub has escaped, care being taken to destroy the grub, as by putting the apples into water, boiling them for pigs' food, or burying them. 2. To destroy the cocoons in autumn and winter. 3. To light fires in the orchard on midsummer evenings, by which the moths are attracted and destroyed. In some parts of America the cuttings are saved when pruning the trees, in order to make fires in the June evenings to destroy these moths. 4. To preserve all insect-destroying birds, especially night-feeding birds, which are peculiarly harmless, and also peculiarly serviceable to man.