

pears that in the latitude of Ontario the first eggs are not laid until a week or more after the petals have fallen, or ordinarily the last of May and the first half of June, while Goethe, of Germany, has shown that most of the eggs are laid at night.

The newly hatched apple worm is so tiny that it can be observed with difficulty, being only about $1/16$ of an inch in length and semi-transparent. It seldom enters the apple at the place where it hatched out of the egg, but crawls about till it finds the blossom end or some other partially protected part, and here it takes its first meal, which is a tiny portion of the outer surface of the fruit, and then after a few hours it begins to enter the apple. Card found many eggs upon the leaves, and the natural inference is that in such cases the young moth feeds at first upon leaf tissue. These observations all help to make it clear how it is that spraying the young fruit and the foliage with Paris green is often effective in lessening the ravages of the codling moth.

The worm sometimes leaves the fruit before it falls, and the worm emerges and seeks a suitable place to transform, either under the loose bark of the trunk or crotch of the tree, or on fences, rubbish piles, or stumps, any where, says Mr. Slingerland, except in the ground.

In regard the number of broods, Fletcher, of Ottawa, reported in 1895 "that careful observations made during ten years convince me that in this part of Canada there is only one regular brood of this insect in the year. This is, I believe, the case as far west as Toronto. In the fruit growing districts of (South) West Ontario there are two broods, the second brood being invariably the most destructive."

There are a number of insects which prey upon the codling moth, but the birds are the chief friends of the orchardists in this work, especially the downy woodpecker, blue bird, crow, blackbird, kingbird, swallow, sparrow,

wren, chick-a-dee and jay. Riley and Walsh state that "almost all the cocoons of the moth that have been constructed in the autumn at the trunks and limbs of apple trees, are gutted of their living tenants by hungry birds, long before the spring opens." "And yet," says Slingerland, "enough codling moths succeed in running the gauntlet every year, and allow it to take rank as the most destructive apple pest in nearly all parts of the world."

Trapping the worms by bands on the trunks was first practiced by Dr. Trimble in 1864, when he devised his famous hay rope band which was often renewed, and the old bands full of worms burned up (see Fig. 1745). This was



FIG. 1745. THE HAY-ROPE BAND IN OPERATION.
Reduced from Dr. Trimble's Picture

practiced in Michigan between 1870 and 1880, where it is said a noticeable improvement was the result.

Recently more attention is being given to bands as a means of checking the codling moth, and it has been found more convenient to use bands of sacking, as proposed by Mr. Orr, than the old fashioned hay bandages. These can easily be applied by driving a tack through the lapped ends or by tying with a cord. During July and August the bands must be examined every ten days and the cocoons destroyed, and the whole expense need not exceed four cents per tree. If as is stated, this will capture half the full grown worms each season, the result would surely be evident in a few years, especially if whole townships were to undertake con-