

COTTON WORM

By L. HASEMAN, *Columbia, Mo.*

For the past three years the moth of the cotton worm has migrated northward across Missouri. In some places it has been more abundant than in others and the damage which it has done to fruits has been considerable each year. The past fall the pest was more injurious than in former years. It began to attract attention early in September and was abundant until frost. It spread rapidly across the state and in two weeks seemed to be generally distributed. In places it was so abundant as to literally cover ripening fruit in the orchard and about cider presses and at night collected about lights as I have never before seen moths collect. Everywhere the moth of the army worm was found associated with it.

INJURY DONE BY MOTH.—It is a well-known fact that this moth is able to break the skin of ripening peaches and apples and other fruits. There are cases on record where it has attacked bananas on the city market, though in such cases it very probably selects injured bananas. The moths have a voracious appetite and will feed for hours without stopping after a prolonged fast. The proboscis can be thrust into the flesh of ripe apples and peaches without any trouble and it will reach almost to the pit of an average-sized peach. As the juice is extracted a depression appears which resembles a bruise. This injured tissue is porous and in a short time decay sets in and the fruit is ruined.

Late peaches seem to be the moth's favorite food though it may also attack apples, grapes, pears, tomatoes and other fruits on the markets. In some orchards the crop of Heath Cling and other late peaches was a complete loss this fall. The moths begin feeding about sundown and often completely cover the fruits which they attack. This year they truly assumed the rôle of an important orchard pest.

WORK OF CATERPILLAR.—Missouri is not a cotton state though in a few southeastern counties a great deal of cotton is raised and the crop can be grown with profit even as far north as the Missouri river. The cotton worm was very abundant and destructive to the cotton foliage where the crop was not protected by the use of arsenicals. As the moths migrated northward they oviposited on cotton where it was to be found. At Columbia a small experimental plot of cotton was found to be severely attacked by the fifteenth of September and by the first of October the foliage was all consumed. The moths began to lay eggs as soon as they arrived and continued to do so until all the cotton foliage was gone, for on the first of October caterpillars of all ages as well as pupæ were present. Many immature caterpillars migrated in all directions and failing to find cotton died of starvation.

FOOD PLANTS.—It is said that this caterpillar will feed only on cotton. From rather extensive observations in the field and from limited cage feeding experiments I have found this to be a fact. In the field, grasses, native weeds, legumes, corn and other plants found around the infested cotton patch were left strictly alone by the migrating and starving caterpillars. In cages, alfalfa, red clover, white clover, cotton weed, morning glory, hollihock, dock were, except for an occasional hole being eaten out, refused by the starving caterpillars.

NATURAL ENEMIES.—In this latitude the winter conditions destroy this pest completely and during the summer two parasites assisted. A native ichneumon was found ovipositing in the pupæ and several were bred from pupæ. Some caterpillars were found with the eggs of a Tachina fly on them, though the species was not determined. The caterpillar is so active that it is difficult for the Tachina flies to deposit eggs on it. The boll worm was also found to attack the cotton worm in a few cases.

MR. H. A. SURFACE: I found this moth rather abundant in peach orchards last fall and saw considerable damage to Salway peaches. It was not nearly so numerous as was the case two years ago but considerable injury resulted.

MR. J. J. DAVIS: It is interesting to note that the moths seem to lay their eggs after migrating. I would like to ask if there is any data regarding egg-laying after the migratory period?

MR. LEONARD HASEMAN: We made no observations as we did not know the pest was breeding in the vicinity until we saw the caterpillars. It was the first year that we had seen these caterpillars feeding so far north.

MR. C. T. BRUES: We caught quite a number of these moths at an electric trap light at the Bussey Institution, Forest Hills, Mass., but it was impossible to secure eggs from them. They come quite regularly every few years and are apparently too much exhausted by the long flight to deposit eggs.

PRESIDENT H. T. FERNALD: A paper will now be presented by H. B. Scammell.

THE CRANBERRY ROOT WORM

By H. B. SCAMMELL, *Pemberton, N. J.*

(*Withdrawn for publication elsewhere*)

SECRETARY A. F. BURGESS: I do not care to discuss the paper, but would like to state for the information of some of the members that several cranberry bogs in Massachusetts were seriously injured