

Press Bulletin No. 165

Agricultural Experiment Station

Kansas State Agricultural College

Greater Wheat Straw-worm.

Of the insects attacking the stems of growing wheat, aside from Hessian fly and chinch-bug, only one appears to have done enough damage to attract attention, and that has been the greater wheat straw-worm (*Isosoma grand e* Riley.) This insect has this year appeared in considerable numbers in many parts of the Kansas wheat belt and some of our correspondents have expressed the conviction that, in limited localities, it has done as much injury as Hessian fly.

OCCURRENCE.

We have taken it in abundance in Sumner, Harvey and Riley counties and have received it from correspondents in Pawnee and Russell counties. It has doubtless been at work in many other localities, but, owing to the obscure nature of its work, has passed unnoticed.

OBSCURE NATURE OF WORK.

Of course the results of this insect's work are not always obscure. Sometimes it so weakens the stems that they break a short distance below the head and fall over. Ordinarily, as indicated by this year's study, the greater part of the damage appears in blasted plants, and in poorly filled or empty heads, but as this condition may also be the result of chinch-bug or Hessian fly work, the grower frequently attributes his loss to the wrong cause.

HABITS AND LIFE HISTORY.

Where it now is. —The greenish yellow, footless larva, one-fourth of an inch or less long, is now just above or in the joint inside the wheat straw, both as it lies in stack and remains on the ground as stubble. Our studies have shown that it may occur above or in any joint from the surface of the ground upward. At Manhattan about 70 per cent of the larvae were found just above or in the second and third joints above the ground. The grower may determine whether this insect is abundant in his fields by splitting open the straws and looking for the larvae inside.

What it will do this fall and winter. — The larva will remain where it is until October when it will change into a black pupa and remain thus throughout the winter.

What it will do next spring. — About next March, small, pitchy-black, wingless, ant-like creatures, each about one-eighth of an inch long, will emerge from the infested straw and stubble and crawl, if possible, to growing wheat, where they will deposit eggs in the embryo wheat heads. The tiny grubs hatching therefrom will feed and fatten on this highly nutritious food, attain full-growth, transform and emerge about May as shining-black, winged, ant-like insects, one-fourth inch or less long. This brood appears to be made up entirely of females. They will deposit their eggs within the straw, usually just above the first exposed joint below the head. The grubs that hatch from these eggs will be the ones that will do the midsummer damage.

METHODS OF COMBATING.

Rotation. —When the grower has to deal with the greater wheat straw-worm alone, and can find it practicable, the planting of the succeeding crop on a part of the farm distant from the infested stubble and straw will enable him to avoid damage from this insect.

Destruction of stubble and straw. — This is the surest and in many cases the most convenient way of controlling the straw-worm and also the joint-worm. The stubble may be burned or plowed under so deeply and carefully that none will be left sticking out to form passageways for the adults when they come forth the following spring. The straw may be destroyed by fire or any other convenient method. Inasmuch as the joint-worm is known to inhabit grasses such as frequently grow in the fence-rows about the edges of the wheat fields, and as our studies would indicate that some individuals of the wheat straw-worm may have a similar habit, it would be well to burn off or otherwise destroy the grasses along the fences before next spring. If both Hessian fly and straw-worm be present, the grower has but to destroy stubble, straw, and grass along fences and to practice late sowing to avoid serious injury from either of these pests. T. J. HEADLEE *Entomologist.*

Manhattan, Kan., Aug. 25, 1908.