

are very liable to break off; the lodging of the grain may, therefore, be largely due to the injuries of this insect. In one field just before the harvest I observed a large number of isolated straws lying in a horizontal position; there was not the general breaking down of the grain characteristic of wind and rain; but distributed through the grain that was standing there was a large number of isolated straws that were lodged. A careful examination showed that this breaking down of the grain, in 45 per cent. of the cases, was directly due to the injuries of this insect. In many cases the straws had been broken off a considerable distance above the ground, and before the larva had made the characteristic circular cut near the root. An examination of these straws showed that the larva had eaten all, or nearly all, of the softer inner part of the straw for a short distance, thus making a weak place which was easily broken. As a rule, however, the larva obtains a greater part of its nourishment by tunnelling the joints of the straw and does not eat enough of the straw in any place to cause it to break until it makes the circular cut near the ground described above.

After the circular cut has been made, the larva fills the cavity of the straw just below it for a short distance with a plug of borings. Between this plug and the lower end of the cavity of the straw there is a place measuring about one-half inch in length (10 mm. to 15 mm.). It is here that the insect passes the winter. Immediately after cutting the straw and making this plug the larva makes a cocoon by lining the walls of this space with a layer of silk. This layer is thin but very firm and more or less parchment-like; it can, however, be broken with slight difficulty, being somewhat brittle.

Within this cocoon, which remains in the stubble after the grain is cut, the insect passes the winter, in the larval state. It changes to a pupa during March or April; and sometime during the month of May the adult insect appears.

The exact date of the appearance of the insect depends upon the nature of the weather. This year from pupæ collected on the 23rd of April and brought into the Insectary, the adults emerged from the 8th to the 10th of May; while the insects left in the fields were ten days later in emerging.

The adult insect is a four-winged fly belonging to the order *Hymenoptera*, the order that includes the bees, wasps and ants; and it is a member of the family *Tenthredinidae* of this order, a family comprising the insects commonly known as saw-flies. This popular name refers to the fact that in this family the female insects are furnished with a more or less saw-like organ. This arises near the caudal end of the body, and is the ovipositor. By means of it the insects are able to make incisions in the tissues of plants for the reception of their eggs.

In the *Canadian Entomologist*, 1890, p. 40, Mr. Harrington records the occurrence of this insect at Ottawa, Ont., and also at Buffalo, N. Y.

THE HABITS OF A GROUND-HORNET.—*Stizus speciosus* is the largest native ground-hornet, and its formidable appearance and great activity generally secure it undisputed possession of the square rod where it happens to alight. It is from an inch to an inch and one half in length; the head and thorax are brown and the abdomen is black with six irregular yellow blotches. These markings are discernible as it flies swiftly about its business and give it a particularly tiger-like appearance. It seems to be afraid of nothing, and if you walk near its burrow it flies with a menacing buzz in circles about you, and its brown, black and yellow body gleams in the sunlight.

In constructing its burrows it usually selects a country road side or a dry barren hill, where a freedom from roots makes digging less laborious.