

obtained one pair of some weed (they black parasites. few specimens of n their coverings head of seed, but agton, the small

een made in un- of those by Prof. coun, in Hudson ans, at Sudbury, . H. Cowdry, at

now time to give he resumption of

From the Divi- ve been issued. ed timely publi- sons as the best ster, of Purdue t crops, and has d questions with Cresson's much l of the greatest

mplete in itself, d a useful work e a further part d, is announced it is needless to

by insects dur- e drought, have ontinues to levy ut only amongst tly abundant to ic to the Pacific, at. I received, ole groves were eets here, hardly for the English supply of, what airness to these le cock sparrow to, a full grown to cross a path

ous and of very ain produced in r, the excessive mplaints of the some localities, ew Brunswick. injury to wheat

representative of the

has been inconsiderable. Perhaps the insect of most interest is the "Wheat-stem Maggot," the larva of a small fly known to science under the name of *Meromyza Americana*. This insect has been observed during the past three years, but nowhere in very large numbers, and only a few complaints have been received of its operations; but, on the other hand, it is found upon enquiry, that it has been seen in a great many localities, and, moreover, it appears to be steadily increasing in numbers. In some localities in the Ottawa district where, however, it must be stated most enquiry has been made, it is reported to have been present for years. Dr. Ferguson, M.P. for North Leeds, states that it is always most prevalent in good seasons, and when there is great drought and a small crop the insects do not appear in such large numbers, but when the growth is vigorous and there is a good deal of moisture, they appear almost invariably. As this was an exceptionally dry year, should this theory be correct, I fear we may, in an ordinarily moist season, anticipate a severe attack from this insect. There are two distinct kinds of injury committed by this insect. The presence of the larva of the second or summer brood is indicated by the top joint of the wheat turning white just about the time the wheat is in blossom. This character is very noticeable and has gained for it the name of "Silver-top" in some localities. The other kind of attack is that by which the larva destroys the young central shoot of the autumn grown plants of fall wheat.

Dr. Ferguson states that the usual course amongst farmers in his constituency, has been, where they are general, to put the mower in and cut the crop. This, however, is a severe remedy to which it has not often been necessary to have recourse.

Mr. D. James, of Thornhill, in the County of York, states that it works particularly in the variety known as "Goose spring wheat," and says, "It is three or four times worse in my fields this year than last. At a rough estimate about every thirtieth head is affected, and it may prove more than this."

This information is sufficient to show that it is an object requiring special study.

The life history of this insect is briefly as follows:—The eggs are laid on fall wheat in the autumn—in September and October, these hatch and pass the winter in the larval state, and in the following spring produce, in June and July, the perfect insects. It is supposed by Prof. F. M. Webster, of Purdue University, Ill., that these lay their eggs in volunteer wheat, and that these again produce the injurious brood which attacks the autumn fall wheat. Another supposition is that the perfect insects remain alive until the fall wheat appears above ground. This, however, seems hardly likely, and if Mr. Webster's theory be not correct, it is probable that the gap is bridged over by the existence of a brood in some of the wild grasses.

Timothy hay has for the last few years suffered severely from a similar injury, by which the top shoot is also destroyed, and the records of the two attacks are much mixed up.

I have failed in my efforts to breed this insect to maturity. I am, however, at present of the opinion that it is not the *Meromyza*. The remedies which suggest themselves for *Meromyza* at the present stage of the investigation are *late sowing* of fall wheat and clean cultivation, by which all volunteer wheat is destroyed.

From the similarity of the attack by the autumn brood to that of the Hessian fly, I feel confident that the two are sometimes confounded by farmers. The larvæ and pupæ cases of the two are, however, very different in appearance. The Hessian fly, I am thankful to say, is not very injurious in Canada at the present time; but in parts of Illinois it has lately committed great depredations. The outbreak of this pest, which occurred in England last year, has drawn much attention to entomology in that conservative country, and the name of one of our honorary members, Miss Eleanor A. Ormerod, is now more than ever a household word amongst the grateful farmers, whom, by her prompt action and safe advice, she has put in a position to protect themselves against this scourge. I am still however of the opinion, notwithstanding the present state of affairs, that the Hessian fly will never become a "first-class pest" in England. As well as Miss Ormerod, Mr. Whitehead continues to write and publish valuable advice to the farmers on injurious insects. It is to be hoped that they may be awakened to see the value of his words and follow the instructions he so plainly gives.

The injury to other grains has been small, and with the exception of the as yet