

Q. Do you know of any beneficial insect which destroys the Hessian fly?—There are parasites which destroy the Hessian fly and also the wheat midge. The disappearance of the wheat midge is supposed to be the result of the operations of the parasite. There are probably minute parasites on all the midges and small flies, and upon their operations, to a certain extent, depends the scarcity or abundance of the insects in certain years. They help to keep them down. The cabbage butterfly is also kept down by a small parasite.

Q. Has a midge or Hessian fly-proof wheat been discovered?—Yes; I think it was in 1856 or 1857 that the midge was first introduced into Canada. It was introduced into the United States from Europe about the beginning of the present century, and it was very destructive in some parts of the State in 1854. In 1856 or 1857 it did great damage in Ontario; the damage to the wheat in one of those years was estimated at \$8,000,000. But by the introduction of midge-proof wheat the damage was lessened, and of late years the midge has not been abundant. Mr. Arnold, of Paris, made experiments with midge-proof wheat obtained by hybridizing. There were certain varieties which were not touched by the midge owing to their hard covering, but these produced inferior grain. By hybridizing them with a wheat producing a good grain, he got midge-proof wheat, which, owing to the hardness of the cover, resisted the attacks of the larvæ. In the same way, to a certain extent, the Hessian fly has been dealt with, by getting a grain with a heavier stalk. The Hessian fly feeds in the joints of the stalk above the root; if the stalk is too hard for it, it cannot injure the plant very much. But as regards the Hessian fly, sowing the wheat very late in the fall is, perhaps, the principal method of dealing with it. It attacks the fall wheat principally. The eggs are laid just above the root, in the fall, and the larvæ feed in the root and in the stem. By sowing the wheat as late as possible in the fall, it would not grow sufficiently for the fly to do much damage to it.

Q. Would the amount that would be saved repay the cost of an entomological office in Ottawa?—Undoubtedly it would. It has done so in the United States. They have a very efficient Bureau there now. And although the Central Government maintains this Bureau at a comparatively large cost—from \$20,000 to \$25,000—a number of the States have their own entomologists. These States evidently find that it pays, or else they would do away with their own entomologists and avail themselves solely of the work of the Central Government. Instead of doing that, they are really increasing their entomologists. In the State of New York they had a very eminent man, from 1855 to 1872, the late Dr. Fitch, whose labours saved an immense amount of money, not only in New York, but in all the different States. They now, after being without an entomologist from 1872, have another one, a very superior man, indeed, Mr. J. A. Lintner; so that they at least see the advantage of having entomologists. Illinois, Missouri and other States have them also. If these individual States find it advisable to have State entomologists, we should consider it advisable in Canada, seeing that the conditions are even more different as between Canada and the United States than they are as between one State and another.

Q. What do you consider to be the average annual loss suffered, on account of the ravages of insects injurious to vegetation, in Canada?—There are certain crops that are almost wholly destroyed, I may say, at certain times. There are others which suffer from 5 to 50 per cent. If you were to average the losses at a very low estimate, they would amount to very many millions a year. If we were to estimate the total annual value of the agricultural products of Canada at \$200,000,000, and then place the loss at 10 per cent., it would be \$20,000,000. But I think 20 per cent. would be the very lowest to put the loss at, and 25 per cent. would be nearer the mark. If you place it at 20 per cent., \$40,000,000 is the amount of the damage done by the insects. Now, during the past summer, the clover seed midge, a new insect entirely, completely destroyed the clover seed crop of portions of Ontario.

By Mr. Landry:

Q. What order does that belong to?—It is a fly. It is called the *Cecidomyia leguminicola*. It was first noticed in 1878, in western New York. It received that name from Mr. Lintner, now the State entomologist of New York. Since then it