

VIII.—On the Introduction and Dissemination of Noxious Insects.

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(Read May 26, 1882.)

During the early settlement of Canada, injurious insects were much less abundant than now, many of those most destructive having been imported from other countries, chiefly from Europe. In their native haunts efficient checks to undue increase have been provided in their insect enemies, chiefly parasitic species which prey upon and destroy them; but, unfortunately for America, these useful parasites did not accompany the destructive species in their migrations. Hence the latter, finding themselves placed amidst abundant food, increased amazingly and soon became a serious source of trouble.

Among those injuring our staple crops, we have the wheat midge (*Cecidomyia tritici*), introduced into this country about sixty years ago, and which since that time has spread over a most extensive area, bringing dismay and desolation wherever it has appeared in force. It is probable that this insect was first introduced either at Montreal or Quebec, in wheat brought from Great Britain, but it was first noticed as destructive in north-western Vermont in the year 1820. Within the next twenty-five years, it rapidly increased and excited much alarm among farmers in the Province of Quebec and in the Eastern and Middle States. In 1854 it was enormously abundant, and it was estimated that the midge destroyed that year, in the State of New York alone, fifteen millions of dollars worth of wheat. In 1856 the loss in Canada was believed to exceed two and a half millions of dollars, and in 1857 it destroyed about one-third of the entire Canadian wheat crop. For some years after it continued to be very destructive, but gradually lessened in numbers; and of late years this great staple product of the country has not been injured by this insect to any appreciable extent. Whether this immunity is due to climatic influences, to improved methods of cultivation and regular rotation of crops, to the introduction of superior varieties of wheat, more or less midge-proof, or to the friendly help of insect parasites, is unknown. Probably all these causes may have combined to bring about this beneficent result.

The Hessian fly (*Cecidomyia destructor*) is also generally believed to be an imported insect, brought here during the latter portion of the last century, although some distinguished entomologists believe it to be indigenous. This has also at times been a terror to the farmer, blasting his hopes and materially lessening the revenue which should have rewarded his honest toil.

The cabbage butterfly (*Pieris rapae*), which has proved such a pest to the market gardener, made its first appearance in this country, at Quebec, during the period of the American civil war, and is supposed to have been brought over with fresh vegetables, supplied to the British troops sent to Canada at the time of the Trent difficulty. The insect has since spread over an immense area and multiplied enormously. It now extends from the Gulf of St. Lawrence, all through the Eastern and Middle States, as far west as Nebraska and south to the Gulf of Mexico.