Farmer's

## TRANSACTIONS

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The Farmer's Journal.

## The Farmer's Friends and His Enemics.

No. 3. WHEAT MIDGES.-(Continued.)

In our last we noticed several enemies of the wheat distinct from the wheat midge, and discinguished the Creidomyia Pritici, and its relative, the Hessian Fly, as being properly midges and not weevils. We also gave an account of the appearance and habits of the former of these insects. We propose now to advert to the remedies for the midge; but may first remark, in addition to the facts stated in our last, that Fitch, in his second report, notices several other minute flies, Dipterous and Hemipterous insects, that injure the wheat, but not so largely as the midge. Some of these insects we have noticed in past years, but were not aware that they are so extensively distributed over America, and so injurious as they would appear to be from Fitch's Report.

One tribe of these minute wheat destroyers consists of several species of *Chlorops* and *Oscinis*, creatures resembling the common house fly in form, though of very minute size. Their larvæ or grubs are very small worms of greenish and whitish colours, burrowing in various parts of the plant. Some of the species are well known to observant farmers as "Mow flies," appearing in great numbers, either in the grub or perfect state, on the grain after it has been housed. Another group of species, described by Fitch, are of very different form and habits from the midges, being hemipterous insects, principally of the genus *Thrips*. They are still more minute than the midge, live in the ear, and cause the grain to shrivel. Their larvas are very small, six legged, active and of yellowish and black colours. The habits of these creatures still require investigation, but they are probably far less, destruction that the true midge.

To return to the midge, the facts stated in our last article resolve themselves into the following statements :

1 The insect deposits its eggs on the grain about the time when it is in flower, and usually in the evening.

2 The larva when thickhed attaches itself to the young grain and prevents its growth.

3 When full grown it becomes stiff and torpid, and if left long enough falls to the ground.

4 It buries itself in the ground and thus passes the winter.

5 In early summer, it emerges from the ground as a perfect insect, in which state, if the weather be favourable, it seeks the growing wheat for the purpose of depositing the germs of a new brood.

First, then, can we prevent it from depositing its eggs. This has been attempted by kindling smoky fires on the windward side of the field, and by drawing stretched lines through the heads of the grain when the flies are found to be on the wing. These expedients are no doubt useful, but it is difficult to resort to them on a large scale, and just in the proper time. It has also been ascertained that the bearded varieties of wheat are less likely to be attacked than

those not so protected, and the wheat on high and airy situations, being more agitated by the wind, often escapes when that in low and sheltered places suffers. These are facts well worthy of attention when danger from the midge is apprehended.

In the case of spring wheat, late nowing has been recommended, and is no doubt often effectual. The very early varieties must however be selected; and there are not so productive as others, and hate sowing is likely to expose the crop to injury from autumnal storms and rust. Beside these difficulties, it is known that the midge is somewhat irregular in its appearance. A correspondent in Upper Canada suggests to us that this may depend on the relative warmth and moisture of different springs, and this we think very likely, from having observed that the midge could be hatched from a flower pot in a sunny window much earlier than the time of its appearance in the open ground. It is also possible that by the continuance of late sowing, a late variety of the midge might in time be produced, which would not come forth until the late sown grain was ready for it. Nevertheless late sowing has been much practised, and to a certain extent has been effectual.

As the midge does not appear to like rye, and is not found in oats and barley, it would be possible, periodically, to avert its ravages as well as those of many other enemies of the wheat, by adopting a provision similar to that in the Mosaic Law, for a periodical rest of the land, and restricting the culture of wheat for a year over large districts. Practically this has been done in many places,