

insect, and the article we now copy is a most exact report of its habits in Canada. One side of the ear is destroyed, while the other remains untouched, because the other side remains partly covered for a few days when the ear is first appearing, and the fly cannot injure it until the grain becomes too hard for it. We have seen by reports from various sections of the British Isles, that the wheat fly has done considerable injury to the wheat, and in numerous instances it does not appear that farmers understood what has injured their crops, some attributing to a blast, red gum, &c. &c.

WHEAT MIDGE—CARSE OF GOWRE.—The deficiency in wheat caused by the larvæ of the wheat midge is not great on an average of the whole district. Some fields are not a little deficient from this cause; but their numbers are few, and many fields have entirely escaped. This resulted from the stormy nature of the weather in June, when the ears were bursting their sheath the high winds forcing the delicate midges to take shelter amongst the foliage till the ears were fairly past danger. Those fields that have suffered happened to be just showing ear on one or two mild evenings when the insects were able to ascend. On one of these evenings the large number of 40 midges were observed on one ear, some of them busy depositing their eggs on the upper part of the glumes. The circumstance that one side of the ear is generally attacked, while the other remains safe, gave rise long ago to the notion that the insects were produced by equivocal generation and appeared subsequently to easterly fogs; the side of the ears facing the east having been observed in some instances injured, while no larvæ were found on the glumes on the other side. This and many other foolish notions were entertained by some of our Carse farmers in 1827, and the two following years, in which years it was estimated that the injury done by this insect cost the farmers in this district £90,000. Such opinions are now no longer entertained here, for our farmers have had too many opportunities of studying the habits of the insect in its various stages. It would seem, however, from paragraphs and reports in newspapers, that farmers in many parts of the country are even now but entering on an acquaintanceship with this small, delicate, yet formidable insect. Some talk of sifting the larvæ and pupæ from amongst the grain on the barn floor, not knowing that the wheat midge, *Cecidomyia tritici*, and the insect that infests wheat in granaries, are entirely different insects, not even belonging to the same genus. When the larvæ of the wheat-midge have done their work, they immerse from the

glumes on a fine sunny day, when these burst open by their natural elasticity, and then, gathering their two ends together, spring from the ears and immediately dig about an inch or so into the soil, and pass the winter there in the pupa state. The pupæ are all safe below the ground about a month before harvest. By using a skinn conlter in winter-ploughing, the pupæ may be buried too deeply to allow of the midges coming up next summer; but even where this has been done, and beans sown next season, the midges have found their way to the surface by ascending between the bean roots and the soil around them. A mean temperature of 56 degrees for a week in the beginning of summer brings the insect into the fly state, and it hovers about the field where it found its winter quarters, till the wheat in neighbouring fields begins to show ear, when it is directed towards it by the organs of smell. By collecting a few of the pupæ from the soil in autumn, a flock of midges may be had from them in mid-winter, by imitating the requisite natural temperature artificially. The larvæ found in the envelope of any one grain are produced from the eggs deposited therein, and the insect in the larva stage does not go from grain to grain. Before speaking of plans to guard against this, or any other insect, its habits should be studied. Could anything be done by spreading quicklime between the drills of wheat just at the time when the larvæ are ready to descend from the ears and burrow in the ground? or would a layer of salt, soot, or other material pernicious to insects, prevent their burrowing?

It is very strange that they do not appear to be generally acquainted with the wheat-fly in England, though it appears that the insect has done considerable damage there this year. The following extract of a letter from the *Mark-Lane Express*, gives a description of the larvæ of the wheat-fly and the injury done to the wheat. There cannot be any doubt that considerable damage is done to the wheat crop in the British Isles by the fly, but the farmers do not appear to understand the matter there so well as they do in Canada. The wheat crop of Lower Canada has suffered some injury from the fly this year, but we do not think the injury very extensive. The following is the letter referred to:

Since my communication of the 19th of last month, I have submitted the wheat blight to a microscopic test, and find the animalcula in three separate states:—1st, a caterpillar of am-