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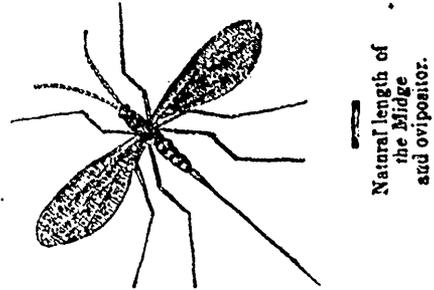
THOS. PAGE,—EDITOR.

BLIGHTS OF THE WHEAT.

CHAPTER VII.

Remarkable as are the diseases prevalent in the wheat, which have been treated on in the last two chapters, they are scarcely more interesting objects of inquiry than the curious devastator of the growing crops to which attention is now about to be directed. Every farmer knows the loss that he constantly sustains, from the large mixture in his samples of shrivelled and defective grains. This continually happens, even when the blossoming plants have promised to yield the most healthy produce, and all his prospects have been as bright as possible. Harvest, however, and the threshing season, have disappointed him, and the reason of the defect in the corn has been completely wrapt in mystery. The researches of entomologist here come to aid him in the discovery of his hidden unsuspected enemies, and demonstrate to him that the defect is frequently due to an insect which, though myriads of them may have existed in his fields, he has never seen or heard of. It is a true parasitic fly of singularly beautiful formation, and its scientific name is *cecidomyia tritici*, or wheat midge. The time to see these midges is in the month of June, from seven till about nine o'clock in the evening, when they often swarm amongst the then blossoming ears of corn. They may be discovered busily engaged about the flowers, and their occupation is laying their eggs in them. Here the eggs produce little yellow maggots, or larvæ, which injure the young ovary, and consequently prevent the grain from attaining its due growth and swelling to its natural dimensions. These maggots are easily found in the ears when the grain is formed, by pulling back the chaff scales. The author for several years past has certainly found large numbers of them, and they have been often brought for his inspection, by farmers who have searched for them at his suggestion. They are mostly accompanied by an orange-coloured dust, which is merely the red robin, with which the reader has been made acquainted in a previous chapter. One farmer imagined that these larvæ were of great use in feeding on this fungus. This was a natural mistake for an unscientific person; but it tends nevertheless to prove to more experienced investigators how cautious they should be not to connect things with each other, simply because they are coincident. The wheat midge lays its eggs in the wheat, breeds in the ear, and does the mischief before noticed. It is therefore, according to the definition given in the first chapter, a real parasite. Though incalculable damage results from its ravages, a description of it will most likely be a novelty to many readers who may have suffered greatly from it, and who are not acquainted with what has been written on the subject.

By far the best account of this curious fly is that of Mr. Curtis, in his admirable papers published in the Journal of the Agricultural Society. It appeared in the second part of the sixth volume. The drawing here given is according to his description, and represents a female with its ovipositor, of which much will be said hereafter. The fly itself is of a pale ochreous hue, and hairy. Its eyes are extremely black, and coarsely granulated, meeting on the crown, and nearly covering the whole head. It has no *ocelli*. There is no visible indication of a mouth, except a short lip and two feelers. The antennæ are as long as the body; the thorax is of a reddish ochre in colour, and the wings are longer than the body, of a whitish yellow, pubescent, and beautifully iridescent when seen in repose. The abdomen is short, tapering to a point,



Magnified figure of Wheat Midge.

Natural length of the Midge and ovipositor.

and is furnished with an ovipositor, or instrument for laying its eggs, nearly three times as long as the body, the oviduct being extremely slender. Mr. Curtis states that he has never seen the male fly, but has no doubt that he should find in it a different form of antennæ. There is abundant matter, in the whole of the papers of Mr. Curtis on the insects affecting the corn crops, to induce a careful perusal. They bring before us, in a most interesting form, many wonderful facts relating to the economy of these minute portions of the creation.

The venerable naturalist, Mr. Kirby, has long been more intimately acquainted than most others with the habits of the wheat midge. In the summer of 1798, he had a good opportunity of making observations upon it, and in the early part of the year following he communicated them to the Linnæan Society in his usual felicitous manner. He saw swarms of them about eight o'clock in the evening, at which time they were busy laying their eggs; but towards nine they had nearly all left the scene of their operations. So numerous were they, that he noticed a dozen at a time laying their eggs upon the same ear. At the same time, he could not discover one he could pronounce to be a male. The males most likely make their appearance at some other time.

Though seen in such multitudes at night, the morning does not exhibit a single one in action; but they are to be found while reposing on the wheat-stalks. If the growing corn is well shaken, they fly languidly about, a short height from the ground, disturbed but not invigorated. They take their rest low down upon the plant, with their heads pointed towards the sky, in which position they may be readily found. The great business of this singular creature seems to be the safe deposition of its eggs in the florets of the wheat. When occupied in this way, they are not easily moved from their engagement, but may be examined if pains are taken to effect this object.—They invariably assume the position most favourable for the insertion of their eggs, by the long ovipositor with which nature has provided them. No indication is afforded by the common appearance of the flies that they are possessed of so curious an instrument, but on pressing the anus of any one of them it may be discovered; and they have the power of unsheathing it at pleasure. They are armed with what Mr. Kirby called a long retractile tube, or *vagina*, which unsheaths an *aculeus*, or pointed instrument like a sting, as fine as a hair. This is introduced into the floret, and by it the eggs are deposited upon the interior valvule of the corolla just above the *stigmata*. The accurate entomologist, to whom we owe these observations, has discovered them several times caught prisoners by being unable to withdraw this instrument. He also witnessed the operation of depositing the eggs, after many attempts in which he failed. One day he gathered an ear upon which the flies were actively engaged, and was en-