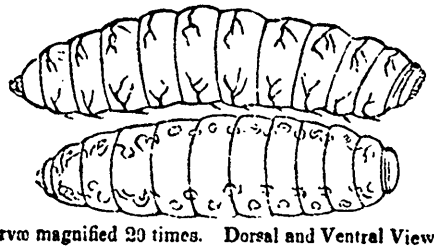
abled by the aid of a pocket microscope to view this remarkable process. "I could," he says, "very distinctly perceive the eggs passing one after another, like minute air-bubbles, through the vagina, the aculeus being wholly inserted into the floret." He adds, "I examined this process for full ten minutes before the patient little animal disengaged itself, and at last it was through my violence that she discontinued her employment, and flew away." If all the eggs that are thus layed in favourable seasons were to be hatched, or if Providence had provided no antidote to their multiplication, the mischief done to our wheat crops would be of the most alarming kind.

The eggs are oblong, transparent, and yellowish, and give birth to larvæ; some of which have at first little or no colour, while others are straw-coloured, yellow, or orange, according to their age. The author found them in abundance during

Views of Larvæ of Wheat-midge, magnified 10 diameters.

August, 1845. The natural size of the larvæ is acurately given in the drawing, and also their appearance when magnified ten diameters. Magnified still farther to the extent of



Larvæ magnified 20 times. Dorsal and Ventral Views.

twenty times, the dorsal and ventral appearances were as here drawn by Mr. Leonard, to whom specimens were entrusted for that purpose. These larvæ have been thought by some persons to feed on the pollen, while others think they live on the juices of the ovary. They unquestionably destroy in some way the power of fructuation; for, after their operations have commenced, it is certain that the germen never swells, and complete sterility results. These little maggots, as has been mentioned, are very easily found upon searching in an ear of wheat that has been frequented by the midges. When the corn is threshed they may be discovered in the chaff dust, and look as if they had entered into the chrysalis state. At first sight, those figured here gave this appearance, but they proved to be larvæ covered with a singular kind of membrane.—Whoever takes the fine dust on the barn floor in his hand, may easily pick them out, and will perceive them to be exactly of the size given in the figures. A good preparer of objects for the microscope would put some up in Canada balsam, when they might be easily examined. Naturalists who have given their attention to these insects, are of opinion that the chrysalis state is not reached till the spring, and that the thin membranous covering is a protection against cold till that condition is attained. It is true that there has been one instance of a fly hatched from a chrysalis in September, but this was an exception. There have been many attempts made to breed these flies from the larvæ covered with the membrane, or the supposed chrysalides found in the chaff; but all have failed. It was tried in vain by the writer; but he thought others might have obtained them by reason of more skilful methods, till on inquiry he found they were equally unsuccessful. Conjectures have, as usual, been sufficiently abundant; and a question has been raised, whether the larvæ do not enter the earth to become pupæ, or chrysalides. Certain it is that the membranous cases of the larvæ are found left adhering to the sound grains and to the chaff-scales; and professor Henslow and others assert, that some larvæ have been known to leave the ears and bury themselves in the earth. Any entomologist who decides the question whether these larvæ certainly enter the ground to turn into pupæ, will do great service to science in general, besides affording information to the farmer respecting the habits of one of the most fatal enemies to his produce when the season is suitable to them. In the author's opinion, the loss in 1845, over some farms, in the county of Norfolk, was considerable; and Mr. Kirby, several years ago, calculated the destruction in one particular field of wheat which he examined, as at least twenty bushels in fifteen acres. In Perthshire, the loss inflicted by the midge in 1828 was estimated, by a careful calculator, at one-third of the crop. In 1830, an intelligent agriculturist in the north observed, "Another year or two of the wheat-fly will make two-thirds of the farmers here bankrupts." Happily these are not common cases; but they are such as the agricultural districts are perpetually in danger of, and therefore the farmers ought to be made well aware of the possibility of the encroachments they are liable to when the flies multiply to any great extent. It does not follow, that because in certain years the damage they have done is insignificant, it will be so at other times, when the flies may, perhaps, come in overwhelming numbers, unless a knowledge of their habits enables us always to oppose a proper check to their increase. "I fear," says Mr. Curtis, "the ingenuity of man will never devise any method for the destruction of this little 'rogue in grain' when once he has taken possession of a standing crop." Professor Henslow likewise remarks, "The researches which I have made on the subject since my report was written, have satisfied me that the damage done by this minute insect is much greater than agriculturists are at all aware of." The author can assert, that in the autumn of 1845, he found great quantities of the larvæ not only in a first-rate wheat district in Norfolk, but in other parts of the country. Ear after ear was gathered by him, examined, and the contents shown to farmers who never before had even heard of such things, and who were perfectly astonished when they saw them. Often has he also entered a barn and taken up a handful of dust from the floor where wheat has been winnowed, turned out the little orange-coloured devourers, now in their membranous cases, one after another, but scarcely ever met with any person who had previously noticed them. If they had seen them, they took them for the seeds of some kind of weed. There seems also to be good reason to suppose that the wheat midge is to be found on the continent of Europe, and that it attacks the corn crops in France, causing the same sterility in the grains that has been shown to be the result of its ravages in England. Such facts are of inestimable advantage; for not only do they enlarge our perception of the wonders of creation, but give us an insight into methods by which skilful observers, resident in the country, may confer signal advantages on their neighbours. To dwell upon the history of the habits of a little midge may appear at first sight trifling and unworthy of an enlarged, well informed mind; but when the benefits on the one hand, and the injuries on the other, of which a multitude of little things are the cause, are considered, we shall soon perceive that the investigation of every single thing made, is a pursuit worthy of not only a rational but of a pious and benevolent spirit, desirous both to give honour to God and to confer benefits on man.

The midge just described in this popular notice, has been properly called the British wheat-midge. There is another midge, of different habits, called the American wheat-midge. It has been designated by entomologists *cecidomyia destructor*, a name which its destructive ravages entirely warrants. The accounts of the dreadful havoc it had made in the crops in America caused much alarm in this country. Happily for us, this apprehension was groundless. The American wheat-midge usually passes under the name of the Hessian fly, because when it was first noticed, the idea prevailed that the Hessian troops brought it with them in their straw from Germany. The year 1776 was the period of its being observed as committing serious devastations. Indeed, such were the injuries it inflicted on the wheat-crops in America, that a question was raised, whether the culture of this grain could be any longer carried on in security. It seems, however, that the work of destruction does not now prevail to a very great degree. Autumn is the season when these attacks commence: