

and the female is of a pitchy colour. Both shine very much; the former is difficult to meet with. Superficial observers, who have noticed the larvæ of the wheat-midge in the ears, have mistaken the ichneumon, which they have observed amongst them, for the parent of these larvæ, and have consequently condemned it as the origin of the very ills it is destined to diminish. This affords another instance of the folly of hasty conclusions, and of the false reasoning relative to the inferences people deduce without accurate investigation, when they merely see two things together. Just in the same way some farmers have concluded that the little ichneumon flies we are now noticing must lay the eggs producing the larvæ of the midge, because they have themselves seen them amongst the corn containing these larvæ. It is time for all observers to arrive at a better state of knowledge, lest we destroy, as authors of mischiefs, the friendly antidotes to their increase. Prejudice and hasty judgment lead to perpetual misconstructions, as to things both moral and natural.

But to return to the ichneumon. This little platygaster may be readily found on the glumes of the wheat-plants, in the months of July and August. It runs rapidly over the ears, and seems to know well which are those occupied by the larvæ of the midge. The author found numbers of them in various wheat-fields in August 1845; and almost invariably, on examining the ears on which they appeared, discovered that they contained the objects of their search. The ichneumon hunts for them with the utmost eagerness, and by the aid of a sharp tail piece, a single egg in each of their bodies. The sight has been witnessed by the following experiment: a number of larvæ of the wheat midge were put on a piece of white paper, pretty near each other, and an ichneumon was dropped into the midst of the group. The energy of her manner, the rapid vibrations of her antennæ, and the whole of her attitudes, were most amusing. On approaching one of the larvæ her agitation quickened to the utmost intensity; she soon bent her body in a slanting direction beneath her breast, applied her tail to the larvæ, and, becoming still as death, sent forth her curious sheath and deposited her egg in the victim, which writhed considerably under the operation. If she came to one that had previously an egg in it, she left it in an instant and sought another; for the platygaster lays but one in each. This however, often repeated, destroys a great many of these little devastators of the grain. The observations of professor Henslow confirm those which have been already made. He says, "When these are hatched, the young maggots which they produce, and which are the caterpillars of the ichneumon, feed upon the fleshy or muscular parts of the caterpillar they are attacking, carefully avoiding the vital parts. At length the caterpillar, they have been thus devouring alive, dies; or, as frequently happens, it changes to the state of a

chrysalis before it is destroyed. The ichneumon caterpillars also pass to the chrysalis state, and either remain within the body of the dead caterpillar, or come out before they assume the fly state. Each species of ichneumon is restricted in its attacks to one, or at most to a few particular species of caterpillar; and the females instinctively proportion the number of eggs they deposit in each individual to the relative size of their own offspring, and that of the insect on which they are destined to prey." It is impossible to contemplate these habits of the minute insects thus brought before our notice, without being deeply impressed with the omnipresence of the great Being to whom all things owe their existence. The same hand that spread the north over the empty space, and suspended the earth upon nothing, and keeps the stars in their courses, regulates the numbers, instincts, and uses of the smallest living things, appearing equally perfect in all:

"What less than wonders from the Wonderful,
What less than miracles from God can flow?"

The two other ichneumons mentioned by Mr. Kirby are supposed to limit the increase of the platygaster tipulæ. One of them is said to oviposit in its eggs, the other in its maggots. There are also many other species, opening a wide and curious field of inquiry for the entomologist. Several very interesting drawings of those alluded to here are given by Mr. Curtis, in the paper previously recommended to the reader's careful perusal. One of these extraordinary flies has an ovipositor, nearly thrice its own length, which it inserts into the parts of the flower containing the eggs in which it designs to lay its own. Indeed the instruments with which nature has furnished all the ichneumons that have been observed, manifest the most remarkable adaptation; and there could scarcely be conceived a more beautiful subject for a separate treatise than that of their forms and habits, whenever they may have been sufficiently investigated. The design of the present remarks is merely to show how carefully there is provided, by the goodness and wisdom of God, a natural antagonism to the disaster that would befall mankind from the unchecked multiplication of our insect enemies. Nor do the ichneumons alone perform this office. There are flies which live upon the midges, carrying them off and devouring them in the same way as hawks and other birds of prey diminish the numbers of the smaller feathered tribes. While this agency is going on in nature, there is left abundance of scope for the exercise of our own ingenuity; and the next question is, how we may effectually call it forth in the way of defence against the little pests now under review?

The economy of the minutest insects and animals with which we are acquainted is quite as wonderful as the nature of the fungi adverted to in the preceding chapter; while some experiments recently made on the infusoria, to which class the