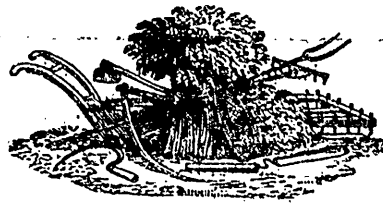


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## BLIGHTS OF THE WHEAT.

### CHAPTER VIII.

The good providence of God has supplied most remarkable antidotes to the overwhelming increase of what would otherwise be the ruinously destructive hosts of the insects that prey upon the corn, which he has given for the sustenance of man. Science and art have suggested other remedies. It is proposed in this chapter to describe them, for the comfort and benefit of the agriculturist. We derive great advantages from the insect portions of creation, both direct and indirect. Many necessities, and even luxuries, come to us from these minute sources, and like the fungi, in consuming decomposing matter, they avert the dangers of numerous fatal diseases that would otherwise approach us on the wings of every breath. On the other hand, their encroachments, as in the instances of the wheat-midge, and Hessian fly, fill us with alarms, and threaten the destruction of our harvests. But all things are wonderfully regulated by Him who holds in his hands the balances of nature, though the modes of their adjustment are often hidden from common view, and, to be known, require, like the treasures of spiritual truth, careful research. We have seen what might be apprehended from the wheat-midge in this country, if it multiplied unchecked; nor are persons in general aware of the marvellous antagonism provided against such disasters. Till the entomologist discovered the wonderful habits of a peculiar tribe of insects, called by the common name *ichneumon*, the existence of such a check on the minute devastators of our crops was totally unknown. Ichneumons, so called, are the instruments of this benefit. The term *ichneumon* has been applied to them, because they are as valuable in their operations for the destruction of insect pests, as the animals so designated are in devouring the eggs of crocodiles and serpents, in the regions where they are the terror of the inhabitants. The little *ichneumons* of the insect world do as great service as the *ichneumons* of Africa, which prevent the dangerous creatures just mentioned from becoming so numerous as to occupy the countries where they abound to the exclusion of other animals, and their own misery from want of food.

In order to understand how the curious insects about to be noticed stay the encroachment of our little midges, a few observations are necessary on their general habits. Their peculiar instinct is to lay their eggs in other living insects, mostly when they are in the larva state. Sometimes they oviposit in chrysalides, and occasionally in eggs; but never, it is believed, in any insect while in a perfect condition. The object of their eggs being thus laid is, that they may under these circumstances, which are favourable to their nature, hatch into grubs. These grubs or maggots soon commence attacking the living substances in which they were placed, and ultimately destroy them. The instinct of these extraordinary creatures leads them to the most complete regulation of the number of their eggs by the size of the victim in each case, and that of the larvæ to which they are to give birth. Sometimes they lay a single egg where there is only enough for the support of its grub, but the numbers vary from one to a large quantity. There is scarcely an insect in existence that is not more or less subject to this species of attack; and the *ichneumons* themselves vary in size according to the dimensions of the bodies on which they are destined to prey. "Some," says Mr. Kirby, "are so inconceivably small, that the egg of a butterfly, not bigger than a pin's head, is of sufficient magnitude to nourish two of them to maturity; others so large, that the bo-

dy of a full-grown caterpillar is not more than enough for one." It is not the *ichneumon* itself, but its larva, or maggot, which destroys such quantities of insects. The *ichneumon* is a fly with four wings, whose food is honey, and the female seems to live only for the purpose of depositing eggs in the way mentioned. "In search of this," we are told by the entomologist just alluded to, "she is in constant motion. Is the caterpillar of a butterfly or moth, the appropriate food for her young; you see her alight upon the plants where they are most usually to be met with, run quickly over them, carefully examining every leaf, and, having found the unfortunate object of her search, insert her sting into its flesh, and there deposit an egg. In vain her victim, as if conscious of its fate, writhes its body, spits out an acid fluid, menaces with its tentacula, or brings into action the other organs of defence with which it is provided: the active *ichneumon* braves every danger, and does not desist till her courage and address have insured subsistence for one of her future progeny. Perhaps, however, she discovers, by a sense, the existence of which we perceive, though we have no conception of its nature, that she has been forestalled by some precursor of her own tribe that has already buried an egg in the caterpillar she is examining. In this case she leaves it, aware that it would not suffice for the support of two, and proceeds in search of some other yet unoccupied." Such are the singular habits of these creatures, thus aptly described. All these processes are, as might be expected, varied according to the number of eggs that may be placed with a hope of safe existence in any one body. As soon as these eggs are hatched, the young maggots revel in the feast the body of their victim provides, while the supply of food in every instance is regulated with an inconceivable precision, so as just to last these young *ichneumons* till they have grown to a size to do without it. Then the grub or caterpillar on which they have existed dies, or, perhaps, just retains sufficient vital power to turn into a chrysalis; which at last does not give birth to a moth, butterfly, or any other fly proper to it, but to several full-grown *ichneumons*, whose larvæ have become pupæ within this case. The author, not many years ago, had a chrysalis which disclosed, at the proper time, no less than seventeen *ichneumons*, instead of a large moth which he had expected to see emerge from it. Instinct, we are told upon high authority, is a propensity prior to experience, and independent of instruction. It is verified in those strange operations. The little maggot which springs from the egg of the *ichneumon* goes on eating up its prey, devouring every part of it except the vital organs, which it never touches, as if it knew instinctively that the death of its victim would involve its own entire destruction by famine. Some *ichneumons* only glue their eggs to the bodies of certain larvæ, because their maggots are provided with instruments for piercing the skins. Others, like the cuckoo among birds, lay their eggs in the nests of insects, which hatch them to devour their own young. Bees are particularly subject to such insidious enemies. No concealment, unless perhaps under water, seems sufficient to baffle the *ichneumon*, and nothing can surpass its perseverance until its eggs are safely placed in the conditions suitable to its progeny.

Great indeed are their services to mankind, in preventing the injuries of the insects which prey upon our corn. "In vain," to use the words of the able naturalist from whose writings quotations have been previously given, "does the destructive *cecidomyia* of the wheat conceal its larvæ within the glumes that so closely covers the grain. Three species of these minute benefactors of our race, sent in mercy by Hea-