

the farmers ought to, and perhaps do, know something about their appearance on the field crops. But perhaps few can tell how it is that they are so numerous, and appear in such thousands on a plant that a few days before seemed perfectly free from their attack. The reason is that they are so enormously productive. From a single female plant-louse, of an ordinary species, may be produced in seven generations the tremendous number of 720 millions of descendants, each one of whom possesses a similar fecundity. In the case of the grain-louse, specimens of which are before us, Dr. Fitch has proved by experiment that "a single one produces four young daily, and these become equally prolific when they are three days

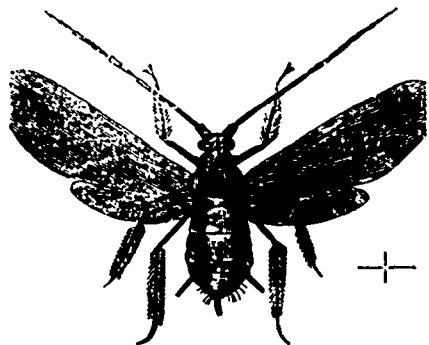


FIG. 1.

old; thus her descendants in twenty days will number upwards of two millions, and will increase at the rate of a million daily!" No wonder, then, that they appear as if by magic where unnoticed before.

The Grain Aphis, unlike most species of plant-lice which confine their attacks each one to a single species of plant, and cannot live upon any other, feeds with equal readiness upon all kinds of grain, such as oats, wheat, barley, and rye. Individually it is very minute and insignificant, but becomes formidable from its numbers. It varies in colour, some specimens being green, especially those that first appear on the leaves, others yellow, and others of different shades up to brownish red. The accompanying woodcuts exhibit specimens enormously magnified; the first a winged female, the other a wingless female; the males are very



FIG. 2.

rarely found, and only appear in the autumn. The structure of these minute creatures is so plainly shown in the illustrations, that we

need not occupy our space with a particular account of it. They live in clusters on the leaves at first, and afterwards on the stems of the flowers and heads of grain; their food consists of the sap of the plant, which they draw out by means of a sucker on the under side of the head. They thus take away from the grain the elaborated sap which was intended to build it up, and so cause it to be more or less shrunk, and deficient in size and weight. When they occur in excessive numbers, they of course diminish the yield of grain, but they are by no means so very injurious as their appearance would lead one to expect.

With regard to remedies, the best are provided by the good Providence of the Creator, and consist of small parasitic insects, which



FIG. 3.



FIG. 4.

prey upon the plant-lice. The most common of these are the ladybirds, both in their larval and beetle states, (figs. 3 and 4); the



FIG. 6.



FIG. 5.

lace-winged or golden-eyed flies, (fig. 5, the eggs; fig. 6, the larva; fig. 7, the perfect insect); the Syrphus flies in their larval state, (fig. 8); and a number of very minute



FIG. 7.



FIG. 8.

ichneumonons that live inside the plant-lice and speedily cause their death. The combined attacks of all these useful insects keep the plant-lice in check, and prevent their increasing to the enormous extent that they otherwise speedily would.

It would be useless to recommend any artificial remedies, such as dusting with lime or sulphur, as their application to a large field of grain would be almost impracticable, and even if feasible, the cost in time and labour would hardly be counterbalanced by the reduced inroads of these tiny depredators. All we can say, then, is, let the husbandman encourage, as far as he can, the friendly insects that we have figured above, and then place his trust in a beneficent Providence for the preservation of his crop.

Specimens Named.

From W. B. & Co., Mimico, Ont., we have received a miscellaneous collection of specimens, with a request that we should notice and identify them in this department of our publication.

The large moth "found on the kitchen-floor," and the other like it, "found under a weed in a strawberry-bed," are specimens of the Potato Sphinx, the perfect form of a very large caterpillar, with a stiff tail, that feeds upon the leaves of the potato and tomato vines, and about which we hear such dreadful tales of poisoning and death. Our correspondent will find an account of it, with illustrations of the moth, chrysalis and caterpillar, in the CANADA FARMER for December 2, 1867, page 365. We would willingly, though it is contrary to our usual practice, return the live specimen of the moth, but it had become so damaged during its travels that it was utterly useless as a specimen. It does not do to keep live butterflies or moths shut up in a small box, as in impatience at their confinement they knock their wings all to pieces, and denude themselves of the scales which constitute their chief beauty. Almost all other kinds of insects may be kept for a time alive without injury. The best way to kill moths or butterflies that it is desired to preserve as specimens is to enclose them in a wide-necked bottle or tight box, in which is placed a piece of sponge freshly moistened with chloroform, the fumes of which will cause them to collapse almost instantaneously.

2. "The two flies with such disproportionately large wings, and which were both taken in the kitchen," are specimens of the Freckled Lace-wing Fly (*Polystachotes punctatus*, Fab.), a sluggish Neuropterous (nerve-winged) insect, whose larvæ probably live in the water and prey upon other insects. It belongs to the same group of insects as the Golden-eyed and other Lace-winged Flies that we have often spoken of as being so useful in devouring immense numbers of plant-lice on hops, oats, and indeed everything else. In their winged state these insects are perfectly harmless, not being injurious to vegetation, or troublesome with bite or sting, and as their larvæ belong to a most useful family, they ought, we think, to be let alone and not destroyed. They are often common in July and August near water. One moonlight night at Cobourg, some few years ago, we saw the lower portion of some large buildings (Smith's block) almost blackened with innumerable specimens of this insect, that had probably come up from the lake or harbour. They are generally common on the wharves there in the summer time.

3. The remarkably pretty spider with opaque white body, ornamented with an oblique pale red stripe on each side, "found amongst the potatoes," we do not know the name of. As spiders are not true insects, we have never studied their structure or classification.