

The advantages of the barn-yard manure, under the unfavorable conditions of a wet, backward spring, followed by a severe drought, were decidedly marked in the crop of 1881 throughout the entire season.

From the first appearance of the plants above the surface to the time of harvest, the barn-yard manure plots could be clearly distinguished, even at a distance, by the vigorous and rapid growth of the crop, and when the tassels and ears were forming, the stalks were not only much larger, but they gave indications of a mature development that was not observed on the other plots.—MANLY MILES,

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INSECT ENEMIES.

THE CUT WORMS.

Shall now engage our attention.

The various species of Cut Worms are exceedingly troublesome in the early part of the season, doing much damage amongst young cabbages, Indian corn, and other plants. As they travel at night, and lie buried at the roots of plants during the day their presence can only be detected by the mischief they do. They are the caterpillars of certain night-flying moths belonging to the families Agrotidæ and Hadenæ.

Last Spring a neighbour took me into his patch of corn to show me how the worms had thinned it out. Here and there, a wilting plant showed where the creatures were still at work. A little digging with a pointed stick soon brought the intruders to light. They proved to be the larvæ of *Hadenæ Amica*. Besides the larvæ of this species, those of

Agrotis tessellata.

Agrotis telifera.

Agrotis clandestina

are commonly met with. *H. amica* cuts off the maize just below the surface of the earth. *A. tessellata* and *A. telifera* cut it off just above the surface. *A. clandestina* drags the plants into the earth to devour them. The habits of these larvæ in other respects are much the same; but the creatures differ from one another in appearance.

The most destructive cut-worm of the cabbage is the caterpillar of *Agrotis devastator*. It is green and lightly spotted and has a glassy appearance. Its head is red, and the first segment of the body, dark brown. It has a few scattered hairs.

There are other cut worms which I need not mention.

It is found that insects of these kinds in their larva state are unable or unwilling to climb a bank of earth. A good preventative, then, to their advance from neighbouring fields is to keep a furrow open around the corn or cabbage patch.

Corn should be planted "in the hill"; and, as soon as possible, the earth should be drawn up around the young plants both of corn and cabbage.

As the cut-worms travel at night on the surface, and do not burrow from place to place, a ring of salt around the plant will effectually bar their approach.

Wood ashes, scattered in moderation, are useful both as fertilizers and protectors.

Digging at the root of affected plants is the only way of capturing the worm.

We will now consider

THE ENEMIES OF THE WHEAT-CROP.

The most formidable enemies of the wheat crop are—

The Midge (*Cecidomyia tritici*)

The Hessian Fly (*Cecidomyia destructor*)

The Chinch Bug (*Macropsus leucopterus*)

The Wire-worm (*Agriotes seneceus*).

The *Cecidomyiæ* are small gnats belonging to the order DIPTERA (*Two-winged Flies*).

The maggots of *C. tritici* find their way to the milky kernels of the wheat, and impoverish the grain by suction.

Those of *C. destructor* carry on their operations just below the surface of the ground, fastening on to the stalks above the joint, where, protected by the blade, they draw the nourishment from the plant.

The Chinch bug is truly a bug, belonging to the HEMIPTERA or Half-winged Insects. It may be known by its white wing-covers. It has a black body relieved with reddish yellow and grey. It feeds in all its stages, not only on the wheat, but on a great variety of other plants. Like other bugs it lives by suction, and has an unpleasant smell.

It has not yet given trouble in Lower Canada.

The Wire-worm is the larva of one of the Elateridæ or Skip-jack Beetles. It feeds upon the roots of the grasses and the various kinds of grain.

To prevent, or keep under, all these plagues, I should recommend,—Fall ploughing as late as possible; thorough working of the land; thorough manuring; the use of phosphates; the growth of Spring wheat of hardy kinds; early sowing, and the protection of small birds.

By these measures the creatures will be exposed to the assaults of their natural foes, starved out, or crushed.

Poor grass land (in which wire-worms usually abound) should be yarded (1) before it is broken up.

Seed corn that is to be planted where wire-worms are likely to be met with should first have a little soft-soap stirred well into it—say, a tea-spoonful, into two quarts, and then be dusted with ashes. The worms will not molest the seed thus prepared.

THE ARMY WORM

is sometimes destructive to wheat as well as to other crops.

It is the caterpillar of one of the NOCTUÆ, *Leucania unipuncta*. The eggs of this species hatch in May. The caterpillar when full grown is about 1½ in. long, and as thick as a goose quill. It is grey with yellowish lines. Its head is yellow marbled with brown.

The chrysalis in its proper season may be found in the earth. It is mahogany coloured, and has a short spine at one end.

The moth is a very uninteresting looking object, drab, or russet, in colour, having a milk-white dot near the centre of the fore wing.

A roller passed over the meadows or young grain will "flatten out" the worms to good effect; and, where the roller cannot be used, a trench round the growing crop will entrap them, as in the case of the cut-worms.

THE TURNIP FLEA.

The Turnip Flea (*Altica striolata*) is a minute beetle.

It is black with a buff stripe on each wing cover. It is beautifully formed, highly polished, and very lively. It hibernates in the imago state, and comes forth early in Spring to lay its eggs, and to enjoy itself at the farmer's expense. Lime-water has been used successfully against its English congener. To disappoint the "flea," sow late.

As most farmers in this part of the country think an orchard to be a valuable adjunct to the farm, I will say a few words upon

THE CODLING MOTH.

The Codling or Apple Moth (*Carpocapsa pomonella*) belong to the Tortrix tribe. It is glossy brown, crossed by scalloped grey lines which give it the appearance of watered silk. At the hind angle of each fore wing is a large oval spot with a copper-coloured edge. It lays its eggs in the eye of the apple while the fruit is on the tree. The young grub

(1) What "yarded" means, I cannot tell; but perhaps it may be translated into English by the word "folded."