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1. The Common Cut-Worm—*Peridroma saucia*.

A New Light on the Scourge of the "Army" and "Cut"-Worm

Specially written for the Canadian Thresherman and Farmer by J.D.D.

2. The Army Worm—*Heliothis virescens*. (Forewings Ochre shaded with white centre spot)

ABOUT the last thing a farmer will interest himself in is the subject of bugs. And yet what the North American farmer has come to regard as a "bug" is quickly developing into one of the most destructive enemies of his grain crop the country has yet had to face—noxious weeds not excepted.

The growing season of 1914 will long be remembered by certain farmers and truck growers of our acquaintance as a record year of loss directly attributable to the "Cut-worm." We need not describe its operations—they are to be seen in every garden, on every farm and homestead at this moment. The most annoying feature of it is the fact that for the greater part it feeds underground or so near to the surface as to be lost to view, but it soon discloses its "cutting" process (from which it derives its name) on the stems of our vegetables and young grain.

As we write (July 18th), a report comes to the West from Woodstock, Ont., of a tremendous onslaught which is now being made on part of that province by the "Army-worm." "In Brant County, near Burford, not merely in thousands or millions, but in billions the 'Army-worm' is today marching through the county laying bare a path several miles wide and doing damage the extent of which it is difficult to estimate. Already more than one farmer has lost practically his entire crop for the season. Pasture fields have been stripped as though swept by a prairie fire live stock is suffering as a result with little prospect of conditions becoming any better during the present season."

In Manitoba quite a number of market gardeners have been com-

pelled to sow or plant their vegetable crop twice, and not infrequently three times, because of the voracity and numbers of "Cut-worms" on the land.

Now all this is sorry reading, but "the worst is yet to come" if we are going to let things take their course and expect "the balance of Nature" to adjust things.

upon it as a "Providential visitation" when a cloud of insects swooped down upon some defined locality or an army of caterpillars crept up noiselessly in the dark from nowhere to clear the land of every green blade.

The idea was that some flagrant act of godlessness in that locality had called down this particular

We have been getting after the cut-worm and the army-worm after they have done the damage. Why not make a dead set on the parent, which eats nothing but lays from two or three hundred to twelve or fourteen hundred eggs that hatch out into caterpillars whose whole life's business is to feed at the rate of something like thirty thousand times their original weight in a fortnight? When she is caring for the household clothes and furs in their summer quarters, the careful housewife does not look for the worm that eats but she swats the creature of wings that produces the feeder. And the housewife is right.

Nature is very kind, but, like all womankind, she resents any foolish interference with her plans quite as much as that polar frost of neglect that freezes the life out of the most long-suffering.

The worm pest has grown, like so much of our weeds, by criminal neglect on the one hand, and by idiotic interference on the other with the lives of those other little creatures (birds and beetles to wit) that find their natural sustenance in those very "bugs" and worms which at times breed far in excess of what no doubt is their legitimate place in the economy of living things.

There is no bungling in Nature. It is when the ignorance of the human elements runs riot among the works of Nature that we find things showing up in lop-sided fashion. The day has passed long ago when men solemnly looked

punishment, the fact being, however, that somewhere either through the continued neglect of the human agency to "keep the place clean" or the same bungling hand being lifted to destroy the bird, beast or insect that was needful to maintain that fine and invariable balance of Nature this little thing or a few days' life was suffered to get out of hand.

"All is love, but all is law," and there is a potentiality of comfort in that to those who are disposed to respect the law and the right of every creature to its existence.

"Big fleas have little fleas

Upon their backs to bite 'em;

Little fleas have lesser fleas,

And so *ad infinitum*."

Bulletins on "The Cut-worm" have been published at an odd time by the Department of Agriculture. We have a half-dozen of these before us published

in Canada as well as in the United States. They give a mass of detail largely of scientific and somewhat elaborate descriptions of the various members of the "Cut-worm" family, and are fairly unanimous in the advice they offer as to the means of dealing with the scourge. Indeed they all seem to have copied from one prototype. If they have failed (and we think they have) to "take hold" upon the popular mind in so far as to excite it to effective action, it is because they smack too much of the academic. We found out long ago that a treatise prepared by one who is essentially a "bugologist" for a class of students is a hopeless document to offer to the average layman.

Now the uniform advice of these pamphlets is to go after the worm by means of poisoned bait, by herding them into furrows or ditches, by setting poultry to work on infected parts, by spraying, etc., then as preventive measures, clean cultivation and protective bands of tin or paper around the plants are suggested. These or any other measures, even to hard picking, are all right in their place, but when aggregated and working with a consuming enthusiasm they will only prove partially effective and (under favorable conditions to the insects) be found as hopeless to deal with the overwhelming crowd as Mrs. Partington found it to sweep back the ocean with a kitchen broom.

Possibly every reader of this magazine has a rough idea of the life history and habits of any one of our numerous representative "Cut-worms." The different species have their own seasons of emerging from the pupa or chrysalis in which they have spent a portion (generally the winter) of their lives, and some forty years' observation and collecting satisfies us that—with trifling