

observers say that two, or at most three per cent. of the whole hay crop would be a liberal estimate. Of course in some places the damage is much greater. All agree in saying that the worm does not touch the grass newly 'laid down,' that it is confined to the old meadows, of which we have a great many here; some of our marsh not being broken up for ten or more years. This year, in order to avoid its ravages, the farmers have ploughed a great deal, which they would not otherwise have disturbed."

"The worms 'work' about the lowest part of the stalk, among what they call here the 'moss,' that is the dead leaves, &c., which cover the ground, so that by far the greater part of them are out of sight. Indeed unless they are very numerous their presence is only detected by the unthrifty appearance of the grass, until a closer observation and 'rooting' about the grass brings them to light. However, when they are very numerous they may be seen climbing stalks, but they always look as if they were 'out of their latitude.'"

Mr. George writes: "In some localities they damaged the English grass to a considerable extent by eating all the fine grass and clover in some places, not leaving anything green standing. This did not extend over large areas and only occurred where the marshes are not well drained. I am quite confident that thorough drainage and good cultivation will prevent the ravages of the Army-worm in this locality."

Dr. T. J. Leeming, of Charlottetown, P.E.I., sends me the following dates for some of the stages of this insect in the Maritime Provinces: "August 19th, at Great Burin: Hay field entirely devastated by the Army-worm; caterpillars of all sizes. August 29th: On shore at Trepaney, Nfld., Army-worm abundant; they appear to avoid clover; on ground that has suffered from their depredations the clover patches stand out untouched. September 8th: The larvæ taken at Trepaney 29th August, pupated to-day. October 17th: Arrived at Charlottetown 6 a.m.; during the night the Army-worm moths obtained at Trepaney, August 29th, came out."

Remedies.—Although only complained of in certain localities, this insect is very wide spread all over Canada, and may generally be found in low spots. This would show the reason why the attack is so severe in marsh lands where the caterpillars have a suitable habitat and an abundance of food. The remedies which have been found most successful are systematic drainage of low-lying lands, by which they become an unsuitable habitat for the young larvæ, and the moths are probably prevented from laying their eggs there. When the attack has been very severe in the autumn or spring; in this way not only are many young larvæ destroyed, but the old stems, which seem to be the favourite place for the spring brood to lay their eggs, are also removed. The conditions which seem most favourable for the undue increase of the Army-worm are a dry autumn, followed by a wet spring and summer. Whenever the first of these occurs, therefore, it would be well to adopt the precautionary measure of burning over the meadows.

The worms may be prevented from marching from one field to another by ploughing a deep furrow across their path. This should be cleaned out so as to leave one edge perpendicular, and holes may be dug in it at intervals, into which the worms may be shovelled and killed by covering them with earth and pressing it down. Prof. Riley also suggests dusting the plants on the opposite side of the ditch with a mixture of Paris Green and Flour or Plaster, so that if any worms succeed in crossing the ditch they will be killed by feeding upon the plants so poisoned. This mixture should be in the proportion of one of Paris Green to 25 or 30 of the other materials.

CLOVER.

Clover as a hay crop has been short, owing to the drought and to winter killing. There was little seed reaped, but I am pleased to find that this was not owing to the ravages of the Clover-seed Midge. Some complaints of injuries by this insect have