## POPULAR AND ECONOMIC ENTOMOLOGY-No. 3.

## CUT-WORMS.

## BY JAMES FLETCHER, OTTAWA.

Of all the injuries committed year after year upon field and garden crops, none are more annoying than those due to the ravages of the various caterpillars known as Cut-worms. These are the larvæ of dullcoloured, active moths, belonging for the most part to the three genera, Agrotis, Hadena, and Mamestra, and in North America alone constitute an army of no less than 340 different described species, many of which are, at times, very abundant. They may be described, in a general way, as smooth, almost naked, greasy-looking caterpillars, of some dull shade of colour similar to the ground in which they The head is smooth and shining, and sometimes of hide during the day. a different colour from the rest of the body. On the segment next to the head is a smooth plate, known as the thoracic shield, and there are three or four series of bristle-bearing tubercles along the sides. are nocturnal, that is, they feed at night and lie hid during the day-time. The habits of most cut-worms are as follows:-The eggs are laid in spring, summer, or autumn, and the insects pass the winter either in the perfect moth state, as a half-grown caterpillar, or as a chrysalis. Those which hibernate as moths, lay eggs in the spring and moths are produced The eggs which are laid in summer and autumn hatch in the autumn. soon after, and the caterpillars either become full fed the same season and pass the winter underground in the chrysalis state, or, after feeding for a short time, become torpid, and so pass the winter beneath stones, heaps of dead vegetation, or in cells beneath the surface of the ground. injury done by the young caterpillars in the summer and autumn is seldom noticed at those seasons, on account of the abundant vegetation; but, in the spring, not only are the caterpillars larger and capable of more mischief, but the land is cleared of all vegetation other than the crop which is to be grown. They are then particularly troublesome in gardens, cutting off young cabbages, tomatoes, and other plants as soon as they are pricked out. When full fed, these caterpillars burrow into the ground to a depth of some inches and turn to brown chrysalids inside a smooth cell or a light