

5. *The Appearance of the Army Worm in the Province of Ontario during 1896.* By Professor J. HOYES PANTON, M.A.

The author gives in this paper the results of his observations upon the army worm (*Leucania unipuncta*) during the summer of 1896, when it appeared in large numbers throughout Ontario. As it infested the fields at the Ontario Agricultural College, he was favourably situated to collect much valuable information.

A sketch accompanying the paper showed very distinctly the infested districts—39 counties and 118 townships. A number of experiments were conducted to ascertain the principal food plants of this insect. The results showed that its food is largely restricted to the *Gramineæ*, and that it will not feed upon plants from the *Leguminosæ* and other orders unless pressed by hunger. When no food was given in twenty-four hours the insects began to devour one another. Many natural enemies were found to prey upon this caterpillar, insectivorous birds, toads, predaceous beetles, and parasitic flies. The Tachina fly (*Nemoræa leucaniæ*) was one of the principal insect foes that kept it in check.

Beneath a windrow of green oats sprinkled with Paris green (a pound to 75 gallons of water) thousands of dead caterpillars lay. This was spread along the ground so as to stop their march into the adjoining field.

Several artificial remedies were referred to, the chief being to plough a furrow with its perpendicular side next the field to be protected, or a ditch may be dug in the same position. Holes dug at intervals of 10 to 15 feet in the furrow or ditch will be useful in catching the worms which fail to climb the sides and wander aimlessly along the furrow. The worms collected in the furrow or ditch may be destroyed as follows:—(a) Ploughing a furrow so as to bury them; (b) sprinkling coal oil upon them; (c) scattering straw over them and firing it; (d) dragging a heavy pole along the ditch.

6. *On a Supposed New Insect Structure.*
By Professor L. C. MIALL, F.R.S.

7. *On Recapitulation in Development, as illustrated by the Life History of the Masked Crab (Corystes).* By W. GARSTANG, M.A.

8. *On Musculo-glandular Cells in Annelids.*
By Professor GUSTAVE GILSON.

TUESDAY, AUGUST 24.

The following Papers were read:—

1. *On the Plankton collected continuously during a traverse of the Atlantic in August 1897.*¹ By Professor W. A. HERDMAN, F.R.S.

Through the kindness of the owners and of the captain of the Allan liner 'Parisian,' I was enabled to run sea-water through four silk tow-nets of different degrees of fineness continuously day and night during the voyage from Liverpool to Quebec. I used two nets (a coarser inside a finer) on the port side, tied to a tap through which about 3,600 gallons ran in twelve hours. On the starboard side the two nets were attached to an overflow pipe, delivering about 21,600 gallons in the twelve hours—six times as much as on the other side. The nets were emptied and the contents examined morning and evening, so that each gathering was approximately twelve hours' catch, and each day, and each night, of the voyage

¹ This paper will be published in full in the *Transactions* of the Biological Society of Liverpool during the session 1897-98, vol. xii., p. 33.