Oenocytes of poultry lice *Lipeurus lawrensis tropicalis* Peters (Phthiraptera: Ischnocera)

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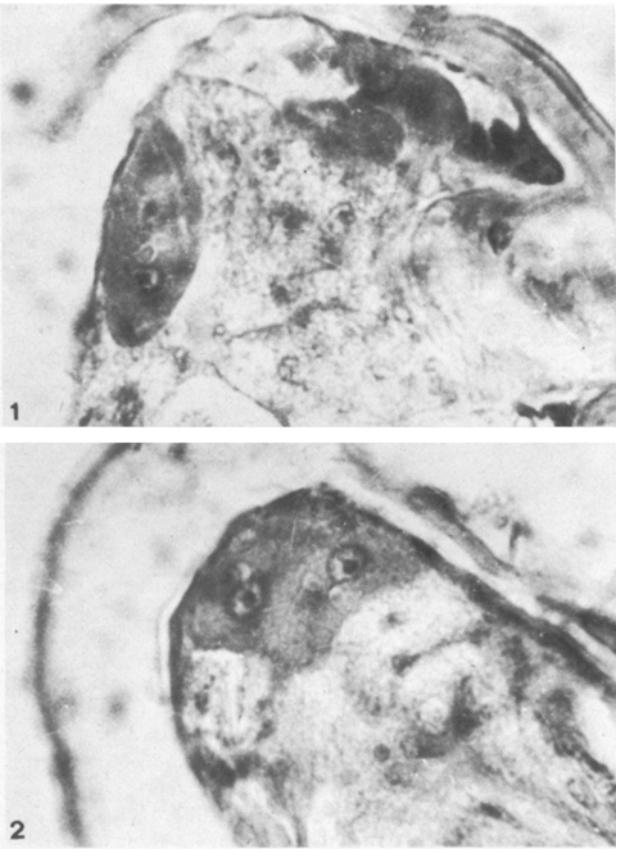
Summary. Oenocytes of *Lipeurus lawrensis tropicalis* Peters, an ischnoceran Mallophaga (Sens. Lat. Phthiraptera) occur either singly or in clusters of 2–6, and do not exhibit any changes in the different stages of nymphs and adults of the 2 sexes.

It is believed at present that oenocytes occur in all orders of insects, except possibly in Thysanura[2], but there is no authentic account of oenocytes in any mallophagan species. These cells arise from the ectoderm, close to the abdominal spiracles, and either remain closely associated with epidermal cells, or project into the haemocoel, or form segmentally arranged clusters, or become dispersed among fat bodies[3]. Their ultrastructure and cytochemistry has been described in some insects[4-8]. They are generally considered to constitute an important organ of intermediary metabolism, discharging their secretion into the blood, but their exact function remains controversial[9,10].

The lice, *Lipeurus lawrensis tropicalis,* were collected from the poultry birds maintained in Banaras Hindu University poultry farm. They were reared in the laboratory in an incubator at 35 ± 1 °C and 90% relative humidity. Adults of both sexes and nymphs at different stages were fixed in Bouin's fluid, and paraffin serial sections of the insects were cut by the usual methods.

The oenocytes of *L. lawrensis tropicalis* are large spherical, oval, pear-shaped or spindle-shaped cells measuring 12–25 µm in length and 6–12 µm in width, occurring singly, or in clusters of 2–6 cells, below the lateral margins of the terga close to the pleural membrane (figure 1 and 2). They are usually found attached to the epidermis, projecting into the haemocoel and closely adhering to fat bodies. In the living condition, both in adults and nymphs, they are colourless and devoid of pigmentation. When stained they show dense homogeneous cytoplasm free from the granules, needles or crystals reported to be present in some insects[9]. The nucleus is strongly basophilic and contains a centrally placed nucleolus. Some cells contain 2 nuclei, which indicates amitosis[9] (figure 1). The cells have a regular form and in no case did they show pseudopodia or vacuolated cytoplasm.

A study of the oenocytes at different stages of post-embryonic development and in both sexes showed that their structure and distribution are uniform throughout, and no visible difference in their occurrence or morphology was noted. Further, contrary to observations that have been made of changes in secretory activity correlated with growth and moulting cycles[3,9], no such cyclic change is noted in this mallophagan species. The absence of a cyclic change indicates that the oenocytes of *L. lawrensis tropicalis,* and possibly other Mallophaga, are not related to the phenomenon of moulting and nymphal growth.



Figures 1 and 2. Transverse section passing through the body of an adult female *Lipeurus lawrensis tropicalis* Peters showing the location of oenocytes. Fig. 1. Oenocyte showing 2 nuclei. × 630. Fig. 2. Uninucleate oenocytes in cluster of 2. × 630.

1 Acknowledgment. Thanks are due to Head of the Zoology Department, Banaras Hindu University, for laboratory facilities and to State Council of Science and Technology, U.P. for financial assistance under the grant No. SCST/4779/BHU(43)/77.

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