

FURTHER OBSERVATIONS ON THE FREELY CIRCULATING HAEMOCYTES OF LIPEURUS
LAWRENSIS TROPICALIS PETERS (PHTHIRAPTERA : ISCHNOCERA)

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Source: *Current Science*, Vol. 50, No. 12 (June 20, 1981), p. 551

Published by: Current Science Association

Stable URL: <https://www.jstor.org/stable/24083003>

Accessed: 28-09-2021 16:18 UTC

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Isolation studies were conducted using blood agar plates (8% Ox blood). Heart blood and material from the necrotic areas on the surface of the liver were streaked on to the plates. The inoculated plates were incubated under 10% carbon dioxide tension at 37° C for 48 hr. On examination, a large number of whitish circular colonies were noticed both from the heart blood and liver. The colonies were 1–2 mm in diameter and showed a zone of beta haemolysis around them. Gram's staining of the colonies revealed the organisms as Gram negative short rods arranged singly. After a detailed study, the isolate was identified as *Escherichia coli*⁴. Pathogenicity of the isolate was done in two white albino mice and it was found to be pathogenic when 0.1 ml of a 18 hr broth culture was inoculated by the intraperitoneal route. Both the mice died within 48 hr after inoculation.

The present report of colibacillosis in a semidomesticated peacock appears to be the first of its kind.

September 18, 1980.

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FURTHER OBSERVATIONS ON THE FREELY CIRCULATING HAEMOCYTES OF *LIPEURUS LAWRENSIS TROPICALIS* PETERS (PHTHIRAPTERA : ISCHNOCERA)

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IN Mallophaga, the presence of Proleucoocytes and plasmatocytes has been shown in *Laemobothrion percnopteri* (Amblycera)¹ and also that of Granular haemocytes and Oenocytoids in *Lipeurus lawrensis tropicalis* Peters (Ischnocera)². Recently, while making the differential haemocyte counts in *L. lawrensis tropicalis*, Adipohaemocytes and the Spherulocytes were also recognised, the description of which is being given here.

Adipohaemocytes: These are small to large, spherical, oval or elliptical cells of variable sizes (2.80–5.70 μ of round cells and 3.75 \times 6.65–6.65 \times 14.25 μ of elliptical cells). A small round nucleus

(0.95–3.75 μ in diameter) is placed excentrically in large volume of moderately eosinophilic cytoplasm. The cytoplasm is filled with characteristic small to very large refrigerent fat droplets (0.5–5.7 μ in diameter). The size of these cells is comparatively larger in the newly emerged lice in comparison to the older ones. This may be due to the reduction of the cytoplasm and lipid contents in the older cells. These cells are very delicate and fragile and get frequently lysed during the smearing. The number of these cells is comparatively much lesser in the blood smears than that of other types.

Spherule cells (Spherulocytes)

Spherule cells are usually round, oval or dumbbell-shaped haemocytes, characterised by the presence of small compact nucleus and numerous spherical inclusions (spherules 0.5–1.5 μ in diameter). The size of these cells varies from 5.70 to 15.10 μ in length and 3.75 to 6.65 μ in width. The nucleus is oval excentrally placed and measures between 1.90 to 3.80 μ in length and 0.95 to 2.85 μ in width. It is generally obscured by numerous membrane bounded intra cytoplasmic spherular inclusions giving the cell a berry-like appearance. Some cells are also seen lysing, releasing spherular materials into the haemolymph and making the nucleus distinct. The number of spherule cells is very less in comparison to the other types and few cells are also observed dividing mitotically.

The present report supplements the earlier information on the haemocytes of *L. lawrensis tropicalis* and two more types, though their number is quite small. Adipohaemocytes and spherule cells are found to be present in the haemolymph in addition to four types already reported.

Though the Adipohaemocytes have been shown in seven orders and Spherulocytes in ten orders of insects³ but the presence of these cells in any mallophagan species is being reported for the first time.

Authors are thankful to the Head, Department of Zoology, Banaras Hindu University, for laboratory facilities and to the Council of Scientific and Industrial Research, New Delhi, for financial help.

October 27, 1980.

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