

CORPORA ALLATA OF *POSTELECTROTREMES NAYARI* (ISOPTERA : KALOTERMITIDAE)

THE corpora allata play a decisive role in the development and differentiation of castes in termites. Lüscher¹ elucidated their functions in *Kaloterмес flavicollis* Fabr. He also postulated that the activity of the corpora allata before each moult was responsible for progressive or regressive moults. This report gives an account of the differences in size of the corpora allata of various castes of *Postelectrotremes nayari* Roonwal and Verma.

Various castes of *P. nayari* were collected from field and maintained in the laboratory. The brain along with retrocerebral complex was dissected, fixed and processed for histological studies. For *in situ* studies, tissues were stained with modified aldehyde Fuchsin². For calculation of the volume of the gland, outlines of alternate sections of the corpora allata of several soldiers and pseudergates were drawn on graph paper using a camera lucida. The mean values of alternate sections were substituted for the sections skipped over. The projected area of each section was calculated in μ^2 .

The corpora allata of *P. nayari* are almost invisible and can be seen only after fixation. They are paired, spherical and transparent. In nymphs the glands are smaller in size whereas in pseudergates and reproductives they are larger. The size of the corpora allata of pseudergates varies between 60–70 μ . In some they appear to be unequal in size. The corpora allata of soldiers are elongated. Each measures 75 μ in length and 55 μ in breadth. A comparison of the volume of the corpora allata of pseudergates and soldiers revealed conspicuous difference. In pseudergates it is 4517 μ^3 , while in soldiers it is 7822 μ^3 . The size increases (70–75 μ) at the time of maturation of imagines.

The physiological role as well as changes in the volume of the corpora allata during post-embryonic development in termites have been worked out^{3–6}. It is assumed that changes in the volume of the corpora allata may reflect their secretory activity in termites^{3,5,6}. But in various other insects the changes may not be a clear indication of secretory activity^{7–9}. In termites including *P. nayari*, it has been shown that an increase in juvenile hormone activity induces soldier formation^{10–13}. Thus it is reasonable to assume that the juvenile hormone titre may to a great extent influence the process of caste differentiation in termites.

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SOME OBSERVATIONS ON THE MIRACIDIUM OF *SINGHIATREMA LONGIFURCA* SIMHA 1958 (TREMATODA : ECHINOSTOMATIDAE)

THE interesting fluke *Singhiatrema longifurca* Simha is a resident in the rectum of the water snake *Natrix piscator* Schnieder. The miracidium of this trematode has been described by Simha and Deshpande¹. However, information on the epidermal formula and a few other anatomical details are not available. In our observations it has been possible to elucidate the arrangement of the epidermal cells and give more details of the organisation of this miracidium so that a comprehensive picture now emerges (Fig. 1).

Miracidia were studied alive and in sections of eggs *in situ* in adult worms. The miracidium at times moves vigorously in a rotating fashion but swims in straight lines. In living condition it is cylindrical and longer than broad measuring 120–128 μ \times 64–72 μ . On immersion in dilute silver nitrate solution it assumes an oval shape and slowly the outlines of epidermal cells begin to appear². At the anterior end there is a distinct terebratorium. There are four tiers of ciliated epidermal cells conforming to the formula 6, 9, 4, 2 (Figs. 2–6). In the first tier there are six cells measuring 20–24 μ in length; two dorsal, two ventral, and one on each lateral side. The second tier has nine cells measuring 36–40 μ in length: three dorsal, four ventral, two lateral. In the third tier there are four cells measuring 20–24 μ in length: one