

later occupy a large position of the leaf surface. In severe cases when the foliage are heavily covered with algal lesions a tendency of defoliation can be observed.

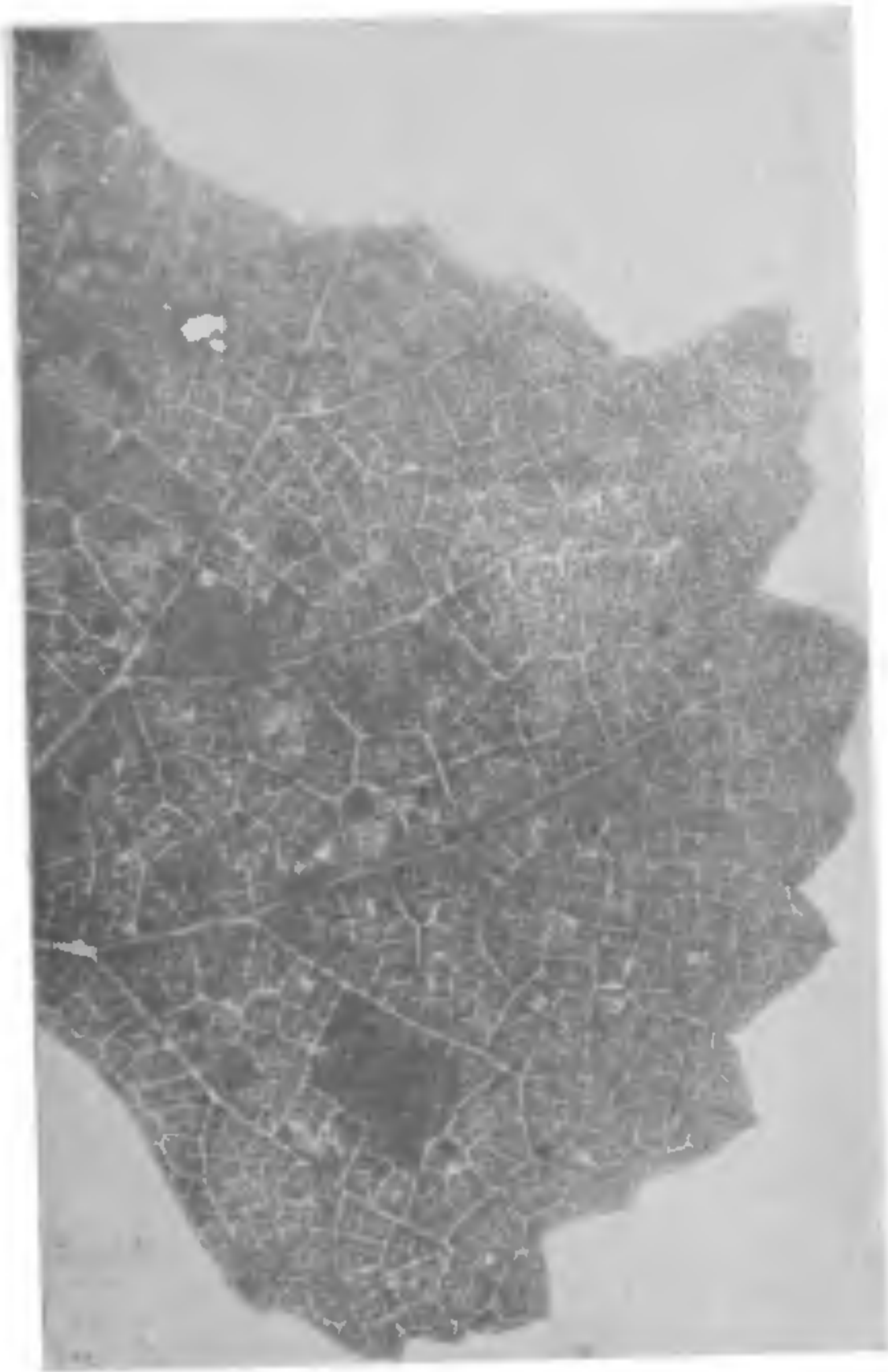


FIG. 2. Enlarged portion of affected grapevine leaf.

Fine hard cut sections were studied to know the host-parasite relationship. The alga was found either wholly external on the epidermal surface of the leaf or partially sunken in the cuticle. In later stages the alga extends between the cuticle and epidermal cells. The thallus of the alga appears as a disk of radially elongated cells, arising by centrifugal growth and repeated dichotomous division from the germinating spore. In vertical section, it is seen that disk is composed of more than one layer. The haustoria could not be seen as the epidermal cells and parenchyma immediately below the alga were discoloured and dead. Certain cells raised on vertical stalks (sporangiophores) at right angles to the surface became sporangia. The sporangiophores consist of thick, rigid, septate hairs about 350-400 μ in length and 45-55 μ broad. Each sporangiophore carries 3 to 7 sporangia which are oval, small, averaging about 30-35 μ \times 15-25 μ . The contents of sporangia segment into numerous zoospores which cause fresh infections.

As the alga covers the leaf surface it disturbs photosynthesis and transpiration and consequently other physiological processes of the host. In an earlier study *Cephaleuros* has been reported to hinder mineral metabolism of mango, guava and sapota (Vidyasekaran and Parambramani⁶). Although this crop has been reported to be affected by fungi, bacteria and viruses from different parts of the world, the report of *Cephaleuros parasiticus* appears to be the first record.

Department of Botany,
University of Gorakhpur,
Gorakhpur (U.P.), India,
April 4, 1977.

R. D. JOSHI,
J. PRAKASH,
L. N. DUBEY,

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ON THE OCCURRENCE OF *LERNANTHROPUS KOENIGII* STP. & LUTK. PARASITIC ON *PARASTROMATEUS NIGER* (BLOCH) IN KERALA WATERS

As the original description of *Lernanthropus koenigi* by Steenstrup and Lutken¹ was not sufficiently detailed, Gnanamuthu² gave a fully illustrated description. The present study has shown certain differences between the material before us and Gnanamuthu's description. We, therefore, present a short description.

Lernanthropus koenigi Stp. & Lutk. (Fig. I, 1-S)

Lernanthropus koenigi, Gnanamuthu, 1950, p. 277, Figs. 19-33.

Body rather plump. Cephalothorax nearly squarish, postero-laterally well rounded and antero-laterally produced into prominent apically rounded lobes. Antennular area convex, nearly a third of the width of the cephalothorax. Anterior division of trunk rather broad, about one and a half times as broad as long, postero-laterally expanded into wing-like lobes. Dorsal plate fully covering posterior part of trunk, nearly equal in length and width, narrowing backwards, with a slight postero-medial declivity.

Antennule six-jointed, first joint very stout and armed with a stout sick-shaped seta or spine, third segment longer than second, all segments carrying setae.

Antenna strong, apex of distal segment grooved. Maxillule composed of a basal part carrying two dissimilar lobes, each terminating in a spine. Distal segment of maxilla rather long and slender, borders of the unguis and distal inner part of distal segment toothed. Maxilliped stout, distal segment strongly falcate.

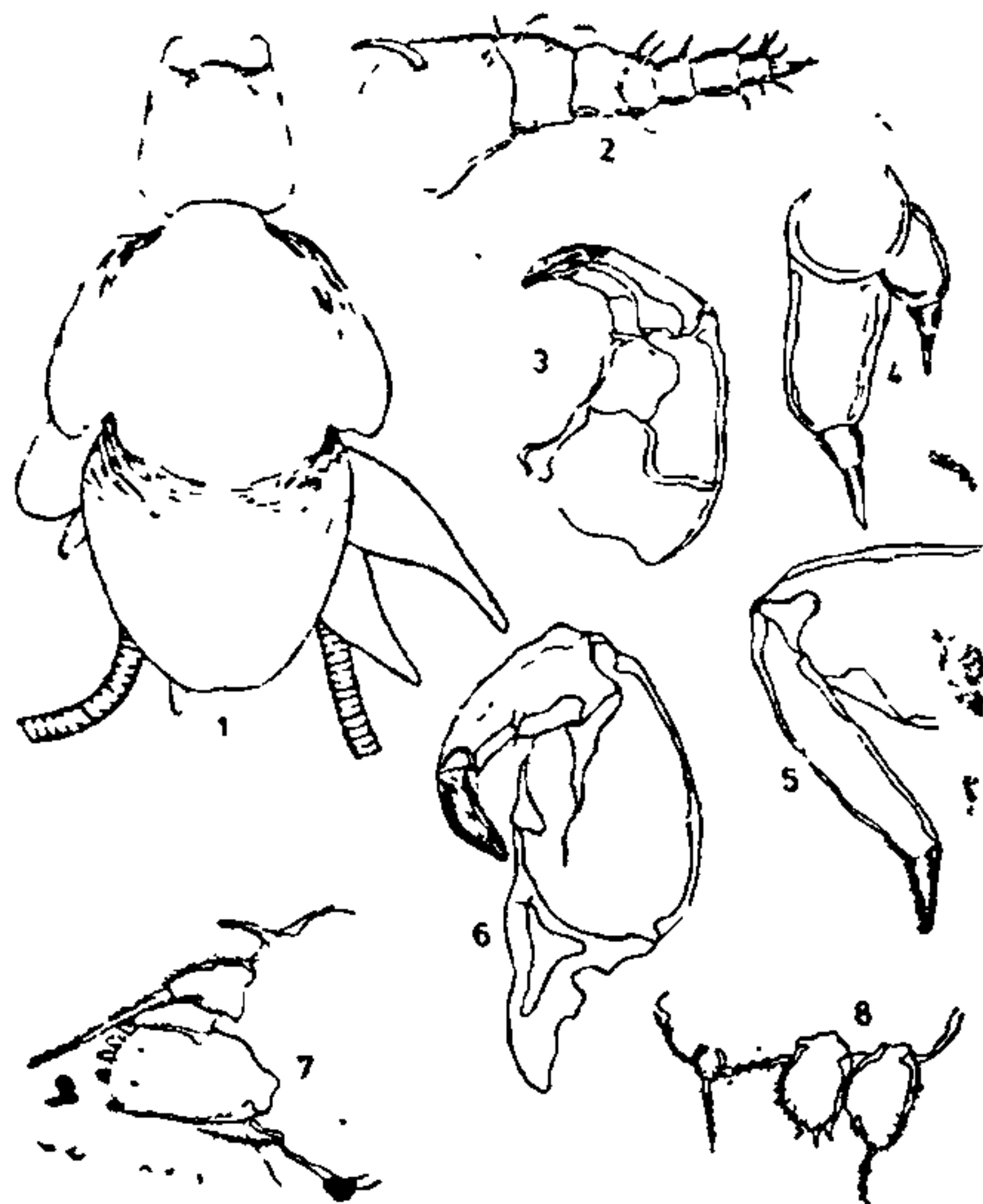


FIG. 1. *Lernanthropus koenigii* Stp. & Lutk. (1) Female, dorsal view; (2) Antennule; (3) Antenna; (4) Maxillule; (5) Maxilla; (6) Maxilliped; (7) First leg; (8) Second leg.

First pair of legs biramous, each ramus composed of a single segment. Exopod somewhat rectangular, with five teeth on distal border, endopod a conical lobe terminating in a very long barbed spine. Basipod with an outer slender seta and inner stouter seta. Both rami with scattered spinules. Second pair of legs similar to first but smaller. Basipod with a small outer lobe carrying a fairly long spine-like seta. Exopod with a row of five spines, endopod nearly as large as exopod, with a single long spine-like seta, much shorter than the corresponding seta of first leg. Third pair of legs large, foliaceous and cutiously twisted. Fourth legs biramous, with flattened rami, abruptly narrowing distally, only slightly projecting beyond the hind end of the body. Fifth leg uniramous, narrower than the rami of leg four.

Gnanamuthu² noted that the antennule is 7-jointed and the distal joint alone carries setae. The stout seta on the large basal segment has probably been missed by him. The antenna is more robust than shown in

the figure. Figures of the first two pairs of legs are unsatisfactory. The exopod of first leg is described as two-jointed. But this ramus, as in all other species of *Lernanthropus*, is only one-jointed. In figures of the dorsal view of the animal the antennular area is incorrectly shown as being separated from the carapace by a partition. Similarly a partition on the trunk behind the hind border of the head and a second septum separating the anterior division of the trunk from the dorsal plate are marked. These are not evident in the specimens before us. According to Gnanamuthu this transverse partition is not clear in preserved specimens and that is the reason why Steenstrup and Lutken failed to notice it. The dorsal plate is, in fact, a backward extension of the trunk protecting the delicate hind legs, the genital segment and the abdomen.

Distribution: Tranquebar, Madras.

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Dept. of Aquatic Biology P. NATARAJAN*.

and Fisheries,

N. BALAKRISHNAN NAIR.

University of Kerala,

Trivandrum-7.

November 12, 1977.

* Present address: University of Agricultural Sciences, College of Fisheries, Mangalore 575 002.

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ON THE OCCURRENCE OF THE TREMATODE *HEMIPERA OVOCAUDATA*

Of the four species dealt under the genus *Hemipera* Nicoll¹ by Yamaguti², none has been reported so far from India and from the present host. A single specimen of the trematode, *Hemipera ovocaudata* Nicoll¹ (*Hemimuridae*) has been recorded from the stomach of the fish, *Channa (Ophiocephalus) punctatus* from Kudi (Jodhpur), Rajasthan, on April 9, 1977.

Measurements (Fig. 1)

Body elongate, 2.04 mm long and 0.57 mm maximum wide in ventral sucker region. Cuticle non-spinose. Oral sucker subterminal, surmounted by a preoral lobe and 0.27 × 0.28 mm in size. Prepharynx absent. Pharynx small, 0.02 × 0.03 mm. Oesophagus not distinct. Intestinal caeca long, terminating at posterior end of the body. Ventral sucker postequatorial, larger than the oral sucker and 0.52 mm in diameter, lying at 0.88 mm from the anterior extremity.