

A NEW HEMIURID PARASITE OF THE GENUS *LECITHOCLADIUM* LÜHE, 1901,
WITH REVISED KEY TO INDIAN SPECIES OF THE GENUS

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ABSTRACT

This paper deals with a new sp. *Lecithocladium sexfasciatum* recovered from *Caranx sexfasciatus* (marine fish) at Ernakulam. Body: 1.88-2.64 mm. in length with faint cuticular plications. Ratio of lengths of oral and ventral suckers, 1:3.4. Oesophagus: absent. Intestinal caeca extend into the ecsoma. Vesicula seminalis: an elongate sac. Uterine coils: slightly extend into the ecsoma. Vitellaria: seven long tubes. Genital pore: at the level of pharynx. The validity of the new species has been discussed.

The key to Indian species of the genus *Lecithocladium* Lühe, 1901 (given by Chauhan, 1954), has been amended in order to accommodate the new species and *Lecithocladium piscicola* (Srivastava, 1935) Yamaguti, 1958.

Lecithocladium sexfasciatum n. sp.

(Fig. 1)

A few specimens of *Lecithocladium sexfasciatum* n. sp. were collected from a marine fish, *Caranx sexfasciatus* Quoi and Gaimard, 1924, at Ernakulam. They are cylindrical with tapering ends. The cuticle is beset with very faint plications which are only observed under high magnification. The body of the fluke measures 1.88-2.64 mm. in length including the length of ecsoma, and 0.272-0.384 mm. in maximum breadth which occurs in the region of vitellaria. The ecsoma separately measures 0.592-0.704 x 0.176-0.272 mm.

The terminal cup-shaped oral sucker, 0.064-0.08 x 0.064-0.112 mm. in size, is guarded by a pre-oral lip. The pharynx is 0.0432-0.048 x 0.032 mm. in size. The oesophagus is absent. The pharynx is followed by two intestinal crura with strong shoulders, which continue into the ecsoma terminating a little in front of its posterior end.

The ventral sucker, 0.192-0.326 x 0.192-0.312 mm. in size, is situated in the first half of the soma and is three or more times larger than the oral sucker.

The testes, two in number, are placed antero-posteriorly, 0.056-0.144 mm. behind the ventral sucker. The posterior edge of the anterior testis may overlap the hinder testis. It measures 0.112-0.136 x 0.112-0.168 mm. The vesicula seminalis, almost pre-testicular, is an elongate sac. The prostatic duct is a long tube which opens into the ductus hermaphroditicus along with the metraterm.

The ovary, 0.064-0.114 x 0.08-0.114 mm. in size, and situated just behind the posterior testis, is somewhat transversely oval in shape. The Mehlis' gland complex is post-ovarian. Vitellaria are seven in number in the form of long filiform tubes. The uterus in the post-ovarian region forms both descending and ascending coils but in the region in front of the ovary it travels as an ascending coil only. The uterine coils slightly

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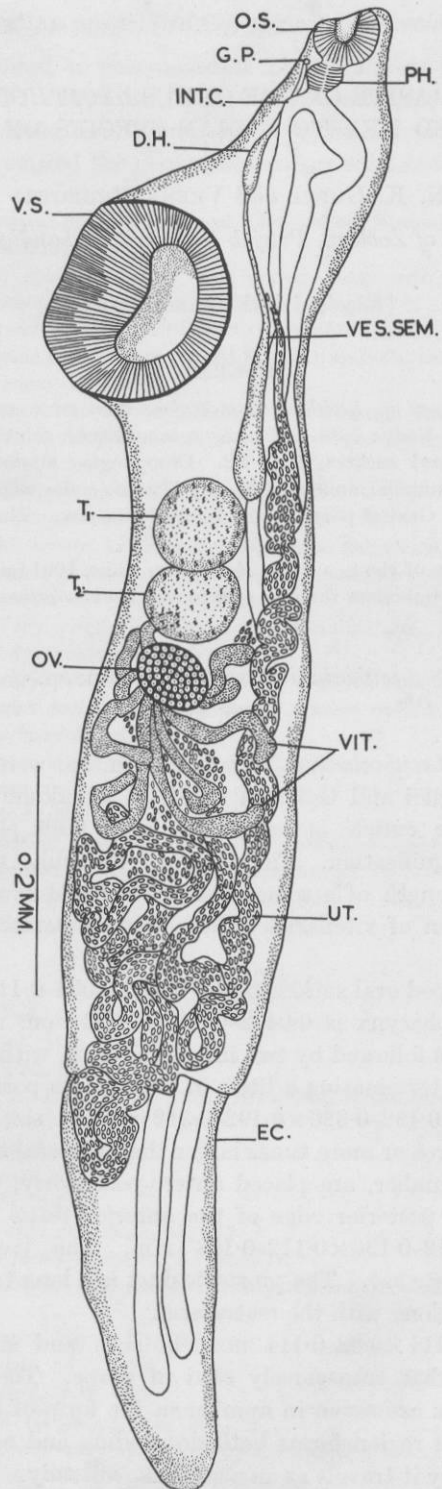


FIG. 1. *Lecithocladium sexfasciatum* n. sp.

extend into the ecsoma too. The genital pore is situated at the level of pharynx. The eggs measure $0.0144-0.0168 \times 0.0062-0.0096$ mm.

Host: *Caranx sexfasciatus* Quoi and Gaimard, 1924

Habitat: Stomach

Locality: Ernakulam (South India)

Discussion:

The genus *Lecithocladium* comprises 19 species, namely *Lecithocladium aegyptensis* Fischthal and Kuntz, 1963; *L. angustiovum* Yamaguti, 1953; *L. annulatum* Chauhan, 1945; *L. brevicaudum* Srivastava, 1942; *L. carultum* Chauhan, 1945; *L. crenatum* (Molin, 1859) Looss, 1907; *L. cristatum* (Rud., 1819) Looss, 1907; *L. excisiforme* Cohn, 1902; *L. glandulum* Chauhan, 1945; *L. gulosum* (Linton, 1901) Looss, 1908; *L. harpodontis* Srivastava, 1942; *L. magnacetabulum* Yamaguti, 1934; *L. megalaspis* Yamaguti, 1953; *L. pagrosomi* Yamaguti, 1934; *L. parviovum* Yamaguti, 1953; *L. piscicola* (Srivastava, 1935) Yamaguti, 1958; *L. psenopsis* Yamaguti, 1934; *L. scombri* Yamaguti, 1953, and *L. seriolellae* Manter, 1954.

The present species has been carefully compared with all the known species of the genus and has been found different from all of them. Firstly, it differs from all the known species in the ratio of the oral and the ventral suckers. The ratio of the oral and the ventral suckers is 1:3-4.2. In *L. magnacetabulum* the ventral sucker is large and has its oral/ventral sucker ratio 1:1.6 (as calculated from the figure) but this species further differs from the new species in having prominent cuticular annulations in the ecsoma, and broader posterior region of the soma as compared to the other regions of the body, whereas in the new form the body is slender.

Lecithocladium sexfasciatum n. sp. differs from the species, viz. *L. aegyptensis*, *L. angustiovum*, *L. annulatum*, *L. carultum*, *L. cristatum*, *L. glandulum*, *L. gulosum*, *L. megalaspis*, *L. pagrosomi*, *L. piscicola* and *L. psenopsis* in which conspicuous cuticular denticulations are present; from *L. parviovum*, *L. scombri* and again from *L. angustiovum*, *L. cristatum* and *L. glandulum* in which the vitellaria extend into the ecsoma or lie near the junction of ecsoma with the soma as in *L. glandulum*. The species *L. annulatum*, *L. carultum* and *L. glandulum* further stand apart from the new species in having oesophagus and spindle-shaped, thick-walled vesicula seminalis. In *L. brevicaudum* the ecsoma is broadly truncated and uterine coils and the intestinal crura do not extend into the ecsoma, whereas in the new form the ecsoma is attenuated posteriorly and into it extend slightly the uterine coils.

L. harpodontis resembles the new form in the presence of faint cuticular annulations, intestinal caeca and the uterus extending into the ecsoma but it also deviates from the new species in having eight vitelline tubes and the genital pore situated at the antero-ventral margin of the oral sucker, whereas in the new species the vitelline tubes are seven in number and the genital pore lies at the level of the pharynx.

In view of the above differences *L. sexfasciatum* has been considered as a new species and has been named after its host.

Abbreviations:

D.H.—ductus hermaphroditicus; *EC.*—ecsoma; *G.P.*—genital pore; *INT.C.*—intestinal caecum; *O.S.*—oral sucker; *OV.*—ovary; *PH.*—pharynx; *T₁*—anterior testis; *T₂*—posterior testis; *UT.*—uterus; *V.S.*—ventral sucker; *VES.SEM.*—vesicula seminalis; *VIT.*—vitellaria.

Revised key to Indian species of the genus *Lecithocladium* Lühe, 1901

This key has been revised to accommodate *Lecithocladium seafasciatum* n. sp. and *L. piscicola* (Srivastava, 1935) Yamaguti, 1958. *L. piscicola* was described by Srivastava, 1935, as *Clupenurus piscicola* but Yamaguti (Systema Helminthum, 1958, Digenetic trematodes, Vol. I) synonymized the genus *Clupenurus* with *Lecithocladium*.

1. Vesicula seminalis bulb-shaped or elongate, oval, thin-walled; cuticular annulations faint or absent; oesophagus absent 2
 Vesicula seminalis oval or spindle-shaped, thick-walled; body with prominent cuticular annulations; oesophagus present or absent 3
2. Intestinal caeca do not extend into ecsoma; cuticular annulations absent; ecsoma broadly truncated; uterine coils do not extend into the ecsoma, actually stop short before the end of soma or body *L. brevicaudum*
 Cuticular annulations faint; intestinal caeca extend into ecsoma, almost to the end; ecsoma fairly well developed; uterine coils extend slightly into the ecsoma 6
3. Vesicula seminalis spindle-shaped, oesophagus present 4
 Vesicula seminalis oval, oesophagus rudimentary or absent *L. piscicola*
4. Female genital organs, like ovary, vitelline glands, etc., situated at about the middle of the body; uterine coils extending only up to near the posterior end of the body or soma; number of vitelline tubules seven *L. annulatum*
 Female genital complex, ovary, vitellaria, receptaculum seminis, etc., situated in the posterior third of body; ecsoma shorter 5
5. Female genital organs—ovary, vitellaria, receptaculum seminis, shell gland, etc., situated near the posterior end of soma or body; uterine coils extend into ecsoma, vitelline tubules convoluted *L. glandulum*
 Female genital organs situated in the third quarter of the body; ecsoma comparatively small, more or less truncated; vitelline tubules in the shape of short, finger-like, non-convoluted tubules *L. carulum*
6. Acetabulum equal to or smaller than the oral sucker; vitelline tubules eight in number; genital pore situated at the anterior ventral margin of oral sucker *L. harpodontis*
 Acetabulum three or more times bigger than the oral sucker; vitelline tubules seven in number; genital pore at the level of pharynx *L. seafasciatum*,

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