

**LOIMOS SECUNDUS (MONOGENEA, TREMATODA)
FROM THE GILLS OF THE COMMON INDIAN
DOG-FISH (*SCOLIODON SORRAKOWAH*)**

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ONLY two specimens of this interesting monogenetic trematode were obtained by one of us (G. D. B.) from the gills of a preserved common Indian dog-fish (*Scoliodon sorrakowah*) at Rangoon, 1925. Study of the worms revealed that they represent a new species of the genus, *Loimos*.

Loimos secundus (Chauhan and Bhalerao, 1945)

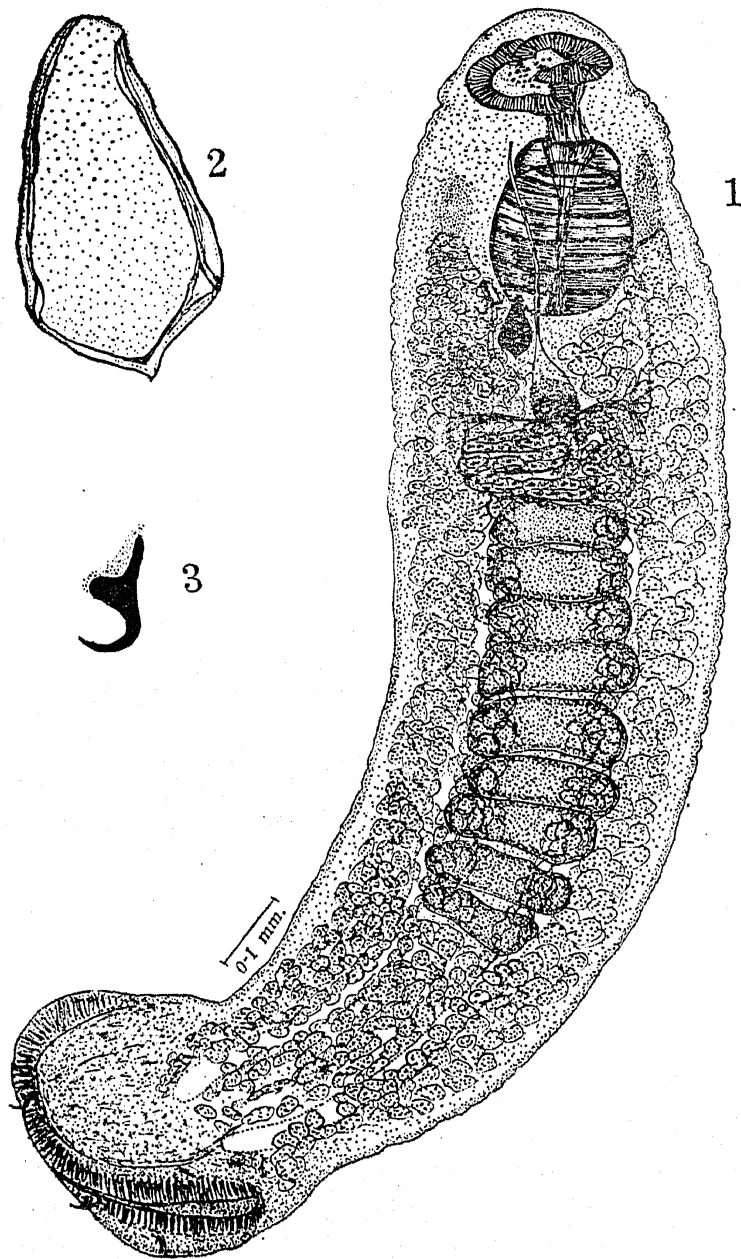
(Syn. *Tricotyle secundus* Chauhan and Bhalerao, 1945)

(Text-Figs. 1, 2 and 3)

Body flat, elongate, tapering anteriorly, broadest in the middle, with a spatula-shaped posterior haptor which is distinctly set off from the body. The parasite measures 1.61–1.63 mm. in length and 0.38–0.48 mm. in greatest width. Anteriorly, the conical head-lobe is separated from the body by slight, narrow, lateral constrictions. Mouth subterminal, guarded by two somewhat inconspicuous sucker-like structures having well-defined radial muscles and semicircular apertures. It leads posteriorly into a distinctly marked pre-pharynx provided with circular muscles and controlled by lateral muscular bands.

Pharynx large and elongate, oval, highly muscular with characteristic transverse muscular bands, measuring 0.18–0.20 × 0.14–0.16 mm. Oesophagus not seen. The two simple and unbreached intestinal cæca pass slightly upwards and then turn posteriorly, proceeding behind along the testes and terminating at a short distance in front of the posterior end of the body.

At the posterior end of the body is a peculiar disc-like haptor, without septa, measuring 0.33–0.35 mm. in diameter. It is a bipartite structure, with dorsal and ventral sucker-like, semi-circular, convex, marginal borders, directed posteriorly. These membranous borders are ribbed on their inner surface with thickenings which extend in an antero-posterior direction and probably represent the terminal portions of numerous longitudinal muscle



FIGS. 1-3.—Fig. 1. Ventral view of *Loimos secundus*. Fig. 2. Egg of *Loimos secundus*. $\times 450$. Fig. 3. Haptor hook of *Loimos secundus*. $\times 450$.

fibres, which extend anteriorly into the body. On the posterior dorsal margin of the haptor are seen a pair of transverse circular folds. They probably represent the two dorsal shallow, cup-shaped structures observed by Manter (1938) in *L. scoliodoni*. The haptor possesses a pair of large widely-separated hooks which have a heavy small truncated root, a long and slender root and a sharply curved blade. The total average length of

a hook is 0.07 mm. Small marginal hooklets were not observed on the haptor.

Ovary is a large, much branched, pre-testicular organ with numerous sinuous tubes, located at about the anterior third of the body. It is median and intercæcal, with its anterior narrow end continuing into the oviduct. Uterus runs anteriorly, on the right side of the cirrus tube. A single egg was seen in one of the specimens, lying partly on the posterior border of the pharynx, to the right side of the cirrus-tube. It is conical, with a small posterior spine, measures approximately 0.14×0.07 mm. and has a highly chitinised shell. Vitellaria extend laterally from the middle of the pharynx near the posterior end of the body, becoming confluent posterior to the testes and anterior to the ovary, leaving a clear tract along the intestinal cæca. The vitelline follicles are small, spherical or elongate and are partly supra-testicular and supra-intestinal in disposition. Transverse vitelline ducts are clearly observable. Numerous small glands, situated in two close groups just anterior to the ovary, probably represent the shell glands. The vagina is not very prominent, thick-walled or muscular as in *L. scoliodoni*, but is a simple antero-posterior slit-like opening, situated postero-lateral to the pharynx.

Testes large, 9-10 in number, median, post-ovarian, tandem and intercæcal. They are transversely elliptical and somewhat lobed bodies. Cirrus-sac median, small, flask-shaped, situated just anterior to the shell gland complex. Its anterior end is cuticularised and continues as a long and slender tube, which runs on the right side of the pharynx and opens to the exterior, through the genital pore. This latter lies on the right side, in the region of the prepharynx.

The excretory vesicles were observed, one on either side of the anterior region of the pharynx.

The species described above, possessing a pair of anterior suckers, well-developed cirrus with a cuticularised long tube, 9-10 testes, much branched ovary, haptor with two sucker-like marginal borders and a pair of hooks, would, according to Manter (1944), belong to the genus *Loimos* MacCallum, 1917 (Syn. *Tricotyle* Manter, 1938). The genus *Loimos* contains three species, *L. salpinggoides*, *L. scoliodoni* and *L. secundus*. The last species resembles *L. salpinggoides* in the possession of nine testes and probably in the shape of egg and cirrus tube, but differs from it in having a single pair of anterior suckers, absence of marginal hooklets on the haptor, the position of genital pore and the egg and in the relative position of the terminal portions of genitalia. It resembles *L. scoliodoni* in the number of

anterior suckers, but differs from it in the structure of vagina, more anterior position of the genital pore, a longer cirrus-tube, absence of marginal hooklets on the haptor and in the lack of three well-marked anterior lobes. The number of testes is also different, being 9-10, whereas in *L. scoliodoni* these are only five.

We accept the creation of the sub-family *Loimoinæ* for the genus *Loimos*, but suggest its transfer from the family *Monocotylidæ* to the family *Microbothriidæ*, on the grounds that members of the sub-family *Loimoinæ* differ from Monocotylids, in the total absence of septa from the haptorial disc, number of testes and in the nature of ovary and anterior haptors. They more nearly resemble Microbothrids, in the nature of anterior haptor consisting of suckers, the nature of buccal cavity and œsophagus, and in the posterior haptor being non-septate.

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