

ON A PLAGIORCHIID TREMATODE (ENODIOTREMATINAE
BAER, 1924) FROM A MARINE TURTLE, *ERETMOCHELYS*
IMBRICATA (Linn.) FROM THE GULF OF MANNAR (INDIA)

By

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ENODIOTREMA SCHIKHOBALOVAE n. sp.

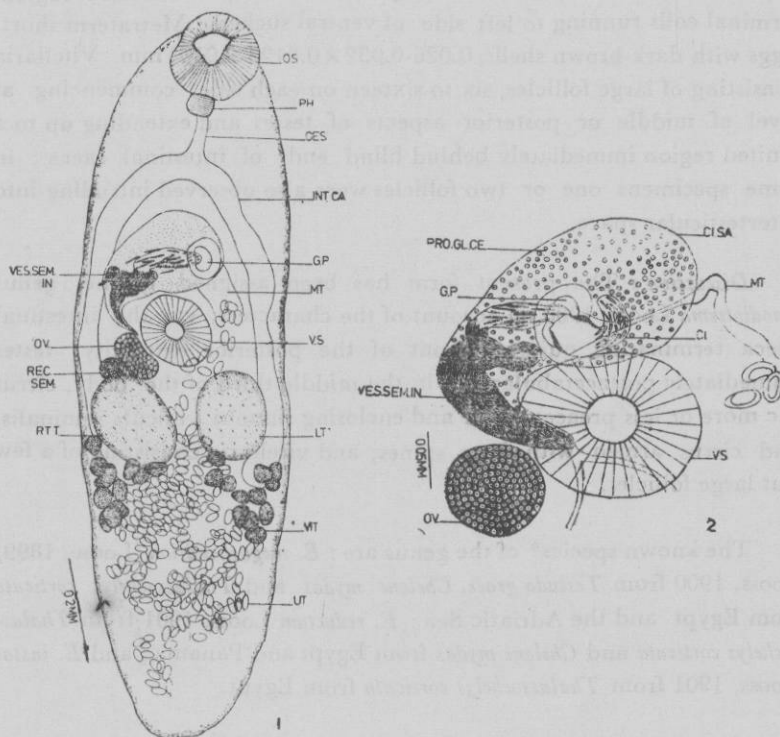
(Figs. 1, 2)

The material of *Enodiotrema schikhobalovae* n. sp. comprised more than two hundred specimens collected from the oesophagus and stomach of a marine turtle, *Eretmochelys imbricata* (Linn.) from the Gulf of Mannar (Pamban, Tamil Nadu). Of these, thirty specimens were used for preparing whole mounts.

Description (ten specimens measured) : Live flukes creamish white in their anterior halves and somewhat black in the posterior owing to the presence of dark-brown eggs in their uterus; body minute, subcylindrical with rounded tips, 0.877-1.344 mm long and 0.36-0.439 mm wide across acetabular region. Cuticle non-spinous. Suckers with feeble musculature; oral sucker 0.131-0.18 × 0.142-0.188 mm; ventral sucker 0.131-0.139 × 0.139-0.164 mm, equal to or a little smaller than the oral, situated just anterior to equatorial line. Pharynx small, 0.024-0.041 × 0.041-0.057 mm. Oesophagus 0.065-0.09 mm long. Intestinal caeca terminating immediately behind testes, *i. e.* far in front of the rear end of body.

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Testes two, somewhat oval symmetrical, intercaecal, in middle third of body immediately posterior to ventral sucker; right testis $0.098-0.196 \times 0.082-0.147$ mm, left testis $0.098-0.164 \times 0.082-0.147$ mm. Cirrus sac $0.196-0.295$ mm long and $0.082-0.147$ mm in its maximum width, anterolateral or anterodorsal to ventral sucker, its major



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Fig. 1. Whole mount (dorsal view); 2. Portion of another whole mount magnified, showing the terminal genital ducts and genital pore.

portion lying in front of the latter, enclosing tubular and sinuous

vesicula seminalis, pars prostatica and spiny cirrus. Genital pore preacetabular, submedian or median.

Ovary rounded or somewhat oval, $0.049-0.098 \times 0.032-0.065$ mm, located between ventral sucker and right testis. Receptaculum seminis postovarian. Uterine coils filling up most of the posttesticular region, terminal coils running to left side of ventral sucker. Metraterm short. Eggs with dark-brown shells, $0.026-0.032 \times 0.0123-0.0164$ mm. Vitellaria consisting of large follicles, six to sixteen on each side, commencing at level of middle or posterior aspects of testes and extending up to a limited region immediately behind blind ends of intestinal caeca; in some specimens one or two follicles were also observed intruding into intertesticular space.

Discussion: The present form has been assigned to the genus *Enodiotrema* Looss, 1900 on account of the characters, viz. the intestinal caeca terminating quite in front of the posterior extremity, testes immediately postacetabular and in the middle third of the body, cirrus sac more or less preacetabular and enclosing sinuous vesicula seminalis, and cirrus armed with long spines, and vitellaria consisting of a few but large follicles.

The known species* of the genus are: *E. megaehondrum* (Loose, 1899) Looss, 1900 from *Testudo grace*, *Chelone mydas* and *Thalassochelys corticata* from Egypt and the Adriatic Sea; *E. reductum* Looss, 1901 from *Thalassochelys corticata* and *Chelone mydas* from Egypt and Panama; and *E. instar* Looss, 1901 from *Thalassochelys corticata* from Egypt.

The present form can be differentiated from the already known species of the genus on account of the differences in the termination of the intestinal caeca in relation to the testes, disposition of the testes,

**E. acariaelum* Looss, 1902 from *Thalassochelys corticata* in Egypt, has been transferred, to the genus *Paralepoderma* Dollfus, 1950 by Yamaguti (1958).

and the extent of the vitellaria in relation to the intestinal caeca. In all of them, the intestinal caeca extend far beyond the testes, i. e. terminate at the level about midway between the testes and the posterior extremity of the body and the testes are rather diagonally placed. In *E. megachondrum* and *E. reductum*, the vitellaria do commence at about the level of the posterior aspects of the testes but do not extend beyond the blind ends of the intestinal caeca. In *E. instar*, the vitellaria begin at the level of the hind border of the ventral sucker, i. e. in front of the testes and the latter come to lie approximately at the level of the middle of their total extent.

The afore-mentioned differences are strong enough for the present form to be considered an independent representative of the genus. Named *Enodiotrema schikhobalovae* n. sp. after Prof. N. P. Schikhobalova, Academy of Science, U. S. S. R., this species is the first representative of the genus *Enodiotrema* from India.

Differential diagnosis: Intestinal caeca terminating immediately behind testes; the latter symmetrically placed. Vitellaria commencing from level of middle or posterior edges of testes and extending up to a little behind blind ends of intestinal caeca.

Because some of the characters of the known species of *Enodiotrema* do not tally with those given by Skrjabin (1960) and Yamaguti (1971) and also in order to accommodate the new species described above, its generic diagnosis needs to be emended.

Generic diagnosis (emended):—Plagiorchidae, Enodiotrematinae: Body flattened, subcylindrical. Cuticle thin, with or without any indication of spines. Ventral sucker at level of one-third body length from anterior end or near equator of body. Pharynx small. Oesophagus short, intestinal caeca terminating at a considerable distance from hind end of body. Testes diagonal *symmetrical*, just behind ventral sucker. Cirrus sac *anterolateral* or *anterodorsal* to ventral sucker, enclosing vesicula

seminalis, prostatic complex and spined cirrus. Genital pore submedian or median, preacetabular. Ovary between ventral sucker and right testis, with receptaculum seminis behind. Uterus inter- and postcaecal, ascending and descending coils overlapping each other. Eggs numerous with thick brown shells. Vitellaria consisting of a few but large follicles, disposed mainly along post-testicular portion of intestinal caeca (may extend into pretesticular zone). Parasitic in gut of marine turtles. Key to the species of the genus *Enodiotrema* Looss, 1900.

1. Intestinal caeca terminating immediately behind testes, the latter symmetrical in disposition. Vitellaria from level of middle or posterior edges of testes to a little behind caecal ends..... *E. schikhobalovae* n. sp.

Intestinal caeca terminating far beyond testes, the latter rather diagonal in disposition..... 2

2. Vitellaria commencing behind testes and extending up to caecal termination.

..... *E. megachondrum* (Looss, 1899) Looss, 1900
 Vitellaria commencing at level of hind edges of testes and terminating immediately in front of caecal termination, occupying relatively less space.....

..... *E. reductum* Looss, 1901
 Vitellaria commencing at level of hind edge of ventral sucker (and testes come to lie approximately at level of middle of their total extent).....

..... *E. instar* Looss, 1901.

SUMMARY

A new species, *Enodiotrema schikhobalovae* from the oesophagus and stomach of *Eretmochelys imbricata* from the gulf of Mannar has been described and its validity discussed. Key to the species of the genus is provided. The characteristic features of the new species enlist : caeca

terminating immediately behind the testes, the latter invariably symmetrical; and vitellaria from the level of the middle of the posterior aspects of the testes to a little behind the caecal termination.

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ABBREVIATIONS USED

CI=cirrus, CI. SA=cirrus sac, G. P.=genital pore, INT. CA.=intestine caecum, LT. T.=left testis, MT=metraterm, O. S.=oral sucker, OES=oesophagus, OV=ovary, PAR. PROS=pars prostatica, PH=pharynx, PROS. GL. CE=prostate gland cells, REC. SEM=receptaculum seminis, RT. T.=right testis, UT.=uterus, V. S.=ventral suckers, VES. SEM. IN=vesicula seminalis interna, VIT.=vitellaria.