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ON TWO NEW SPECIES OF THE GENUS *CHRISOMON* MANTER AND PRITCHARD, 1961 (TREMATODA : MONORCHIIDAE) FROM INDIA

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INTRODUCTION

Some trematodes were collected from the fish *Eleutheronema tetradactylum* from Digha coast, Bay of Bengal, during the course of faunistic survey. The trematodes collected from the fish *Polynemus paradiseus* at Canning Town, Matla river estuary, Sunderbans, Bay of Bengal, which were donated by Dr. Y. R. Tripathy, Ex-Director, Fisheries, Lucknow, have also been studied. Both the fish hosts belong to the fish family Polynemidae. On study, the trematodes were found to be new to science. It belongs to two new species of the genus *Chrisomon* Manter and Pritchard, 1961, which has so far been reported from the fish family Carangidae from Pacific and Atlantic Oceans falling in Neotropical Zoogeographical Region. The report of this genus now from the fish family Polynemidae and Oriental Zoogeographical Region is interesting

The permanent preparation of the material has been made according to the standard method using borax carmine as stain, clove oil and xylol as clearing agents and Canada balsam as mountant. All the measurements are in millimetres unless otherwise stated. The drawings have been made wtth the aid of a camera lucida. The material has been deposited with the National Helminthological Collections of Zoological Survey of India, Calcutta.

Family : MONORCHIIDAE Odhner, 1911

Subfamily : LASIOTOCINAE Yamaguti, 1958

Genus **Chrisomon** Manter and Pritchard, 1961

Chrisomon polynemi n. sp.
(Fig. 1)

Host : *Eleutheronema tetradactylum*, (Family POLYNEMIDAE).

Location : Intestine.

Locality : Digha coast, (West Bengal) ; Bay of Bengal.

No. of specimens : Three, on one slide.

Holotype (encircled) and paratypes : ZSI Reg. No. W 7904/1.

Description (based on measurements of three specimens) : Body small, 0·72-0·92 long, 0·14-0·19 wide, more or less spindle-shaped with the part anterior to ventral sucker more distinctly tapering. Tegument spinose. Ventral sucker 0·05-0·08 long, 0·04-0·06 wide, situated at 0·32-0·43 from anterior end of body. Oral sucker subterminal, 0·02-0·03 long, 0·04-0·05 wide, smaller than ventral sucker. Prepharnyx 0·03-0·04 long ; pharynx globular, 0·02-0·03 in diameter ; oesophagus very long, about 0.2, more than three times the total length of prepharynx and pharynx together ; intestinal bifurcation in front of ventral sucker, caeca extending almost up to posterior end of body.

Testis single, elongated, situated near posterior end of body, 0·066-0·09 long, 0·069-0·074 in maximum width. Cirrus sac elongate, extending into vitellarian zone and extending much posterior to ventral sucker, curving around latter anteriorly, containing elongate seminal vesicle, tubular pars prostatica surrounded by prostate gland cells and long cirrus armed with thorn-like spines, opening into genital atrium. Genital atrium large, shallow, median, immediately anterior to ventral sucker ; atrial spines absent.

Ovary 0·082-0·09 long, 0·069-0·072 wide, irregularly lobed, left of median, contiguous wiih testis anteriorly, not clearly seen due to overcrowding of eggs. Uterus largely between ventral sucker and testis, overlapping latter, not extending posterior to it. Terminal organ or metraterm sac formed posterodorsal to ventral sucker, divided into anterior spinuous part and posterior vesicle. Uterus joining metraterm at junction of two regions of latter. Posterior vesicle of terminal organ with few spines while anterior portion with nume-

rous spines similar to those of cirrus, opening into genital atrium together with cirrus. Uterine seminal receptacle formed, conspicuous behind cirrus sac. Vitelline follicles in ovario-testi-

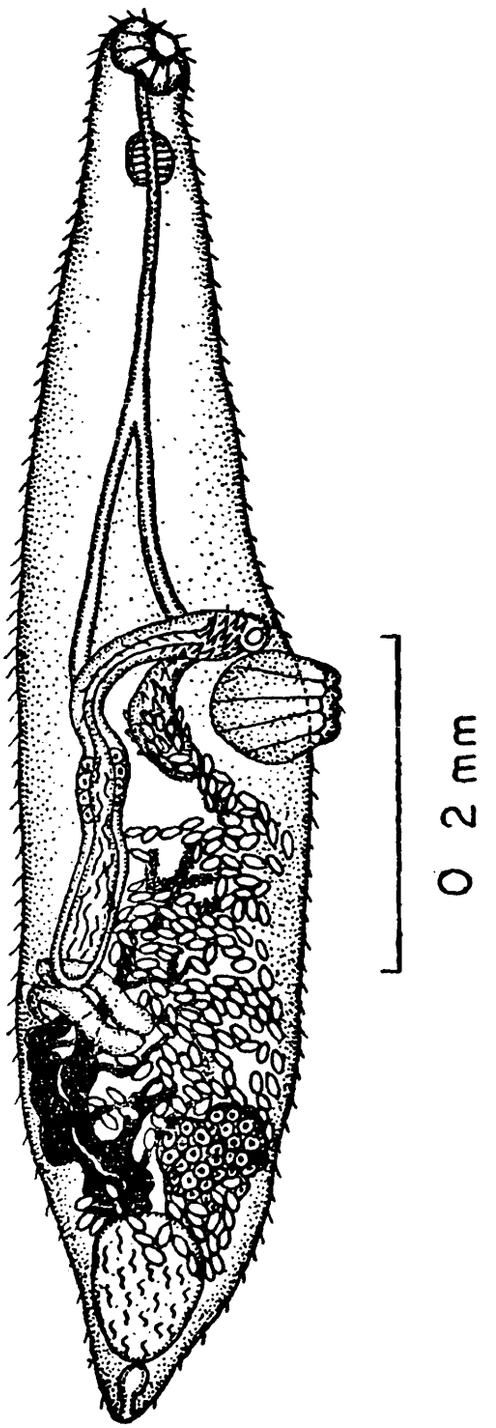

Fig. 1

Fig. 1 : *Chrisomon polynemi* **n. sp. Entire Worm. Ventrolateral View.**

cular lateral zones, a few follicles tending to fuse together to form simple or branched vitelline tubes. Eggs not filamented, 12-20 × 8-12 μm. Excretory vesicle saccular ; pore terminal.

Discussion : In having postacetabular and largely or entirely pretesticular vitellaria in the ovarian zone, the present specimens belong to the subfamily Lasiotocinae Yamaguti, 1958 of the family Monorchiidae. Further, in having small elongate body, oesophagus more than three times the combined lengths of prepharynx and pharynx, elongate single testis, irregularly lobed pretesticular ovary, bipartite terminal organ (*vide* Nahhas and Cable, 1964 ; p. 204), cirrus and anterior part of terminal organ armed with similar spines, vitellaria largely in ovarian zone, remaining restricted posterior to ventral sucker, occasionally follicles tending to fuse to form branched tubes, uterus not extending beyond testis posteriorly and unfilamented eggs, the material fits well within the concept of the genus *Chrisomon* Manter and Pritchard, 1961.

So far only two species have been reported in the genus *Chrisomon*. They are : the type species *C. tropicus* (Manter, 1940) Manter and Pritchard, 1961, and *C. decapteri* Nahhas and Cable, 1964. *Chrisomon polynemi* distinctly differs from both the known species in having ventral sucker almost in the equatorial plane, much larger ventral sucker than oral sucker, and much long cirrus sac extending much posterior to posterior extent of metraterm. *C. polynemi* further differs from *C. tropicus* in posterior extent of vitellaria remaining restricted to anterior fringes of testis whereas in *C. tropicus* it extends up to posterior end of caeca overlapping testis sufficiently, posterior part of cirrus sac enters the vitellarian field while in *C. tropicus* it does not, and the testis is broadly wedge-shaped and much shorter whereas in *C. tropicus* it is more or less cylindrical with irregular outline and more than twice longer. In *C. decapteri* the testis is cylindrical, very long, almost half the body length ; the ovary is much removed anteriad and overlaps testis anteriorly ; the cirrus sac does not enter vitelline field and the vitellaria and uterus both extend into the post testicular zone. In these characters *C. polynemi* is quite distinct from *C. decapteri*.

Chrisomon sunderbanensis n. sp.
(Fig. 2)

Host : *Polynemus paradiseus*, (Family POLYNEMIDAE).

Location : Intestine.

Locality : Canning Town, (West Bengal), Matla river estuary : Sunderbans, Bay of Bengal.

No. of specimens : Four, on one slide, donated to Z. S. I. by Dr. Y. R. Tripathy.

Holotype (encircled) and paratypes : Z. S. I. Reg. No. W 7905/1.

Description (Based on measurements of three specimens) : Body small, 0·75 – 0·81 long, 0·09-0·11 wide, forebody tapering anteriorly, hindbody cylindrical. Tegument

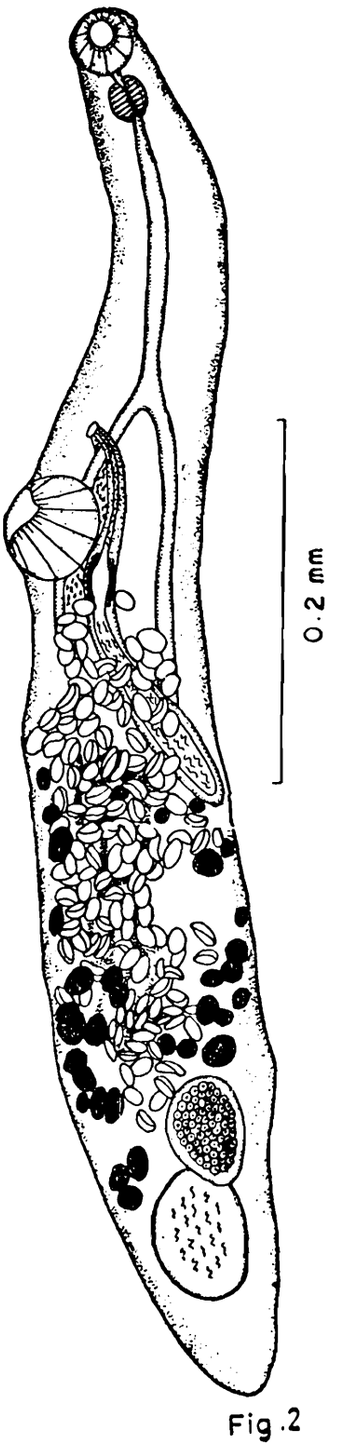

Fig. 2 : *Chrisomon sunderbanensis* n. sp. Entire Worm. Ventrolaterol View.

spinose. Ventral sucker 0 05-0·06 long, 0·04-0·05 wide, preequatorial, situated at 0·28-0·35 from anterior end of body. Oral sucker 0·03-0·04 long, 0·03-0·04 wide, ventroterminal, smaller than ventral sucker. Prepharynx 0·008-0·02 long : pharynx globular, 0·01-0·02 long, 0 02—0·03 wide ; oesophagus very long, 0·15-0·20, about five times longer than prepharynx and pharynx taken together. Intestinal bifurcation in front of ventral sucker. Caeca terminating near posterior end of body.

Testis single, smooth, ovate, situated near posterior end of body, 0·05-0·06 long, 0·03—0·04 wide. Cirrus sac extending into vitellerian zone, elongate, extending much posterior to ventral sucker, curving around it, containing saccular seminal vesicle, pars prostatica surrounded by prostate gland cells and long cirrus armed with thorn-like spines, opening into genital atrium. Genital atrium shallow, immediately preacetabular ; atrial spines absent.

Ovary ovate, smooth, 0·04-0·05 long, 0·02-0·03 wide, pretesticular, overlapping anterior part of testis, slightly left of median. Uterus between ventral sucker and testis ; not descending beyond testis posteriorly. Terminal organ formed, divided into posterior vesicle with very few spines and anterior portion armed with numerous spines similar to those found on cirrus. Uterus joining terminal organ at junction of its two portions. Uterine seminal receptacle formed behind cirrus sac. Vitelline follicles few, on either side of ovario-testicular zone, remaining restricted posterior to cirrus sac, tendency of follicles to fuse not so apparent. Eggs 12-16 × 8-12 μm, unfilamented. Excretory vesicle saccular ; excretory opening terminal.

Discussion : This species closely resembles the previous one and is being reported from an allied species of fish host belonging to the same family Polynemidae. However, it differs from the first species in having the ventral sucker situated more anteriorly from the equatarial plane, the testis is ovate rather than wedge-shaped, the ovary is smooth in outline and overlaps anterior part of testis, and the uterus does not descend up to testis. Further, it differs from *C. tropicus* (Manter, 1940) in the more posterior extent of cirrus sac, smooth ovary (as against irregular in outline) which overlaps the anterior part of testis, ovate (in contrast to elongate and cylindrical) testis, and the uterus not overlapping testis at all. It resembles *C. decapteri* Nahhas and Cable, 1964 in ovary overlapping anterior part of testis only but differs form it in smooth ovary, shape and length of testis, the posterior extent of cirrus sac entering vitellarian zone and vitellaria and uterus not extending in the posttesticular space and the shape of vitelline follicles.

Manter (1940) described *Chrisomon tropicus* (Syn. *Telolecithus tropicus* Manter, 1940) from Panama (Pacific Ocean) from a carangid fish and *C. decapteri* Nahhas and Cable, 1964 was reported from Curacao (West Indies, Atlantic Ocean) from another carangid. These two areas fall in the Neotropical Region. While Manter and Pritchard (1961) proposed the genus *Chrisomon* for *T tropicus*, Nahhas and Cable (1964) emended its diagnosis to accommodate

their own species *C. decapteri* in it. Both these species have been reported from the fish family Carangidae. It is interesting to note that another two species of the genus *Chrisomon* occur in an entirely different fish family Polynemidae in an entirely different zoogeographical area, the Oriental Region.

Key to species of the genus *Chrisomon*

1. Testis much elongated, about half the size of body ; uterus and vitellaria extending into posttesticular space ... *C. decapteri* Nahhas and Cable 1964

   Testis not that much elongated ; uterus and vitellaria not extending into posttesticular space 2

2. Cirrus sac very long, extending into vitellarian field ; ventral sucker distinctly larger than oral sucker 3

   Cirrus sac not that much long, remaining restricted to antero-vitellarian region ; suckers almost equal or slightly subequal ... *C. tropicus* (Manter, 1940)

3. Ovary irregular in outline, contiguous with testis ; ventral sucker immediately in front of equatorial plane ... *C. polynemi* n. sp.

   Ovary smooth in outline, overlapping anterior part of testis ; ventral sucker situated more anteriorly from equatorial plane ... *C. sunderbanensis* n. sp.

SUMMARY

Two new species, *Chrisomon polynemi* and *C. sunderbanensis* are described from two polynemid fishes, *Eleutheronema tetradactylnm* and *Polynemus paradiseus* respectively from West Bengal, Bay of Bengal. A key to species of the genus *Chrisomon* Manter and Pritchard, 1961 has also been furnished.

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