

STUDIES ON THREE NEW LEPOCREADIID TREMATODES (DIGenea : LEPOCREADIIDAE) FROM MARINE FISHES OF ARABIAN SEA, OFF THE BOMBAY COAST, INDIA

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Transversocreadium manteri n. sp. from the intestine of *Argyrops spinifer* (Forsk.),
Pseudolepocreadioides thapari n. sp. from the intestine of *Garres filamentosus* (Cuv.) and
Lebatocreadium gupti n. sp. from the intestine of *Pomacanthus annularis* (Bloch.) are
reported from marine fishes of Arabian Sea, off the Bombay coast, India.

INTRODUCTION

The present study was taken to make the digenetic trematode fauna of marine fishes of Arabian Sea, off the Bombay coast, India better known. Earlier few trematodes were reported by Chauhan (1943 & 1945), Gupta (1968), Gupta & Sehgal (1970), and Hafeezullah & Siddiqui (1971) from this region. In the present study three new lepopocreadiid trematodes are described.

MATERIAL AND METHODS

Fishes were collected along the Sea shore. Trematodes were fixed in F A A fixative under a cover glass for 24 hours. They were stained in acetic alum carmine, cleared in clove oil and mounted in Canada balsam. All measurements in the text are in micron. Holotypes and paratypes were deposited in the Zoology Department of this College.

SYSTEMATIC DESCRIPTION

Transversocreadium manteri n. sp. (Fig. 1)

Twenty six specimens of this form were collected from the small intestine of a marine fish, *Argyrops spinifer* (Forsk.) from the Arabian Sea, off the Bombay coast.

Body transversely elongate, 1,130-1,245 long and 2,730-2,870 wide. Entire body spinose. Eyespot pigments present. Oral sucker spherical, subterminal, 130-160 in diameter; oral opening oval, anteroventral. Acetabulum spherical, 190-225 in diameter, median, larger than the oral sucker, equatorial, 135-165

postbifurcal, at 500-560 from anterior end of body. Sucker ratio 1 : 1.4-1.46. Prepharynx absent. Pharynx ovoid, 80-100 in diameter. Oesophagus short. Caecal bifurcation dorsal, usually between suckers. Caeca simple, arcuate, ending blindly near hind end of body.

Testes 14 in number, arranged horizontally in two rows; six on left side and eight on right side, 80-140 in diameter. Cirrus sac club-shaped, 520-570 long and 150-180 wide, disposed obliquely from left to right, extending from genital pore up to anterior border of acetabulum enclosing ovoid internal seminal vesicle in swollen base, 130-145 in diameter; 170-190 long prostate complex in tubular distal part and 130-160 long, thin-walled cirrus. External seminal vesicle saccular, 365-400 long and 80-95 wide, extending posteriorly up to posterior border of acetabulum. Genital pore marginal, in notch, left to oral sucker.

Ovary deeply multilobed, lobes 100-135 long and 70-85 wide, sinistral to acetabulum. Seminal receptacle saccular, 260-280 long and 100-120 wide, postovarian. Vitelline follicles small, rounded, disposed along the course of caeca. Uterus descending to level of caecal ends. Metraterm tubular thick-walled, 330-380 long; 63-66% of cirrus sac length. Eggs elongate, operculate, confined to the left side of acetabulum, 35-45 long and 26-30 wide. Excretory vesicle tubular, reaching to acetabulum; excretory pore terminal.

Host : *Argyrops spinifer* (Forsk.)

Site : Small intestine

Locality : Bombay coast, Arabian Sea

Frequency : 26 specimens from 3 hosts of 30 examined

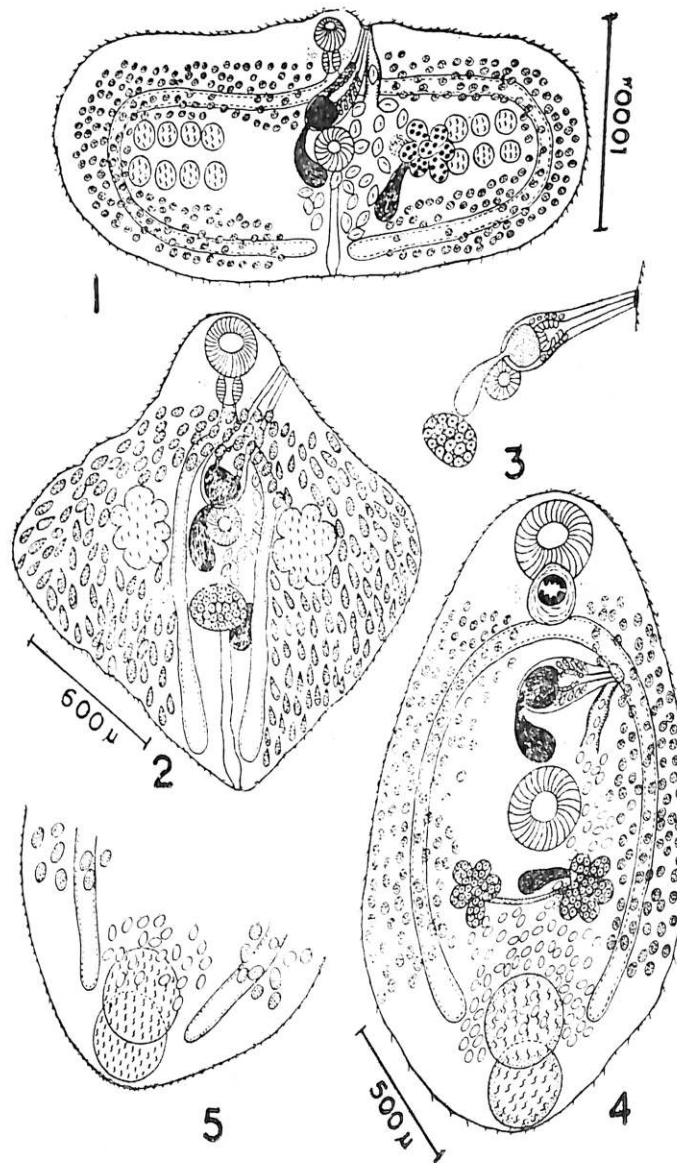
Remarks : Hafeezullah (1970) erected the genus *Transversocreadium* with *T. cablei* as its type species which was described from the intestine of *Triacanthus brevirostris* from Calicut, India and still is the only known species of the genus. The new species differs from *T. cablei* in having 14 testes, arranged in two horizontal rows instead of 11 testes, arranged in one horizontal row, cirrus sac extending up to anterior border of acetabulum instead of up to middle of it, external seminal vesicle extending up to posterior border of acetabulum instead of well beyond it, metraterm of larger size and larger sucker ratio.

The new species is named in honour of Late Dr. H. W. Manter in recognition to his contribution to Helminthology.

Pseudolepocreadioides thapari n. sp. (Figs. 2 & 3)

Fourteen specimens of this form were collected from the small intestine of

a marine fish, *Gerres filamentosus* (Cuv.) from the Arabian Sea, off the Bombay coast.



Figs. 1-5. 1. Ventral view of *Transversocreadium manteri*. 2. Ventral view of *Pseudolepocreadioides thapari*. 3. External seminal vesicle extending posteriorly to anterior margin of ovary. 4. Ventral view of *Lobatocreadium gupti*. 5. Intestinal caeca extending to anterior margin of posterior testis and anterior testis overlapping 1/2 of posterior testis.

Body rhomboid, slightly wider than long, 1,560-1,675 long and 1,610-1,720 wide. Entire body spinose. Eyespot pigments present. Oral sucker spherical, subterminal, 200-230 in diameter; oral opening oval, anteroventral. Acetabulum spherical, median, smaller than the oral sucker, pre equatorial, 180-240 postbifurcal, 140-165 in diameter, at 620-690 from anterior end of body. Sucker ratio 1:0.7-0.71. Forebody 40-42% of total body length. Prepharynx absent. Pharynx ovoid, 85-100 long and 100-115 wide. Oesophagus 50-65 long. Caecal bifurcation dorsal, usually midway between the suckers. Caeca simple, straight, terminating near posterior end of body.

Testes two, multilobed, equal in size, symmetrical, extracaecal, well separated from acetabulum, para-acetabular in position, 270-305 long and 220-250 wide. Cirrus sac club-shaped, straight, 50-590 long and 170-305 wide, lying obliquely between acetabulum and genital pore, enclosing 210-230 long and 190-200 wide internal seminal vesicle in swollen base; 100-140 long prostate complex and 300-340 long cirrus. External seminal vesicle saccular, 215-230 long and 95-115 wide, extending posteriorly to either up to anterior margin of ovary or half way between the ovary and acetabulum. Genital pore marginal, sinistral to oral sucker.

Ovary entire, wider than long, 105-140 postacetabular, median, postequatorial, intercaecal, 130-170 long and 220-250 wide. Seminal receptacle oval, postovarian, 150-200 long and 80-110 wide. Vitelline follicles large, tubular, extending from posterior border of pharynx upto hind end of body, filling wing-like sides of body, confluent in preacetabular area and non-confluent in postovarian zone. Uterus running between ovary and caecal bifurcation. Metraterm indistinct. Eggs elongate, operculate, 42-51 long and 26-32 wide. Excretory vesicle I-shaped, reaching to ovary; excretory pore terminal.

Host : *Gerres filamentosus* (Cuv.)

Site : Small intestine

Locality : Bombay coast, Arabian Sea

Frequency : 14 specimens from 1 host of 9 examined

Remarks: Two species are known in the genus *Pseudolepocreadioides* Hafeezullah, 1970; *P. symmetrorchis* Hafeezullah, 1970 from the intestine of *Drenane punctata* (L.) from Veraval and *P. secundus* Ahmad, 1979 from the intestine of *Pomacanthus annularis* from Puri. The new species differs from both the above mentioned species in having oral sucker larger than the acetabulum, testes multilobed, ovary unlobed, vitellaria extending from posterior border of pharynx, confluent in preacetabular area and

non-confluent in postovarian zone and external seminal vesicle extending posteriorly either upto anterior margin of ovary or halfway between the ovary and acetabulum. It further differs from *P. secundus* in having ovary 105-140 postacetabular instead of immediately postacetabular, eggs of smaller size ($42-51 \times 26-32$ instead of $84-91 \times 39-50$), cirrus sac of larger size (520-590 instead of 372-395) and extending posteriorly up to anterior border of acetabulum instead of extending up to halfway between acetabulum and caecal bifurcation and from *P. symmetrorchis* differs in having testes well separated from acetabulum instead of close to it.

The new species is named in honour of Prof. G.S. Thapar in recognition to his contribution to Helminthology.

Lobatocreadium gupti n. sp. (Figs. 4 & 5)

Nine specimens of this form were collected from the small intestine of a marine fish, *Pomacanthus annularis* (Bloch.) from the Arabian Sea, off the Bombay coast.

Body flattened, broadly rounded at each end, 1,920-2,075 long and 1,200-1,245 wide at level of ovary. Entire body spinose. Eyespot pigments present. Oral sucker spherical, subterminal, 260-285 in diameter; oral opening oval, anteroventral. Acetabulum spherical, median, near midbody, same size as oral sucker, 380-435 postbifurcal at 835-890 from anterior end of body. Forebody 42-45% of total body length. Pharynx muscular, oval, 180-210 long and 170-185 wide, with 8 lobe-like structure projecting from anterior margin into the lumen. Oesophagus absent. Caecal bifurcation dorsal, nearer to oral sucker than to acetabulum. Caeca simple, bowing outward, then backward, ending blindly at midlevel of anterior testis or anterior margin of posterior testis.

Testes two, smooth, tandem, near hind end of body, subequal in size. Anterior testis 270-300 in diameter, overlapping anterior 1/3rd or 1/2 margin of posterior testis. Posterior testis smaller than the anterior testis, 260-285 in diameter. Posttesticular space absent. Cirrus sac claviform, 330-370 long and 160-185 wide, disposed obliquely between genital pore and acetabulum, enclosing 125-150 long and 120-135 wide, oval internal seminal vesicle in swollen base; 90-100 long and 55-75 wide prostatic vesicle and 70-86 long cirrus. External seminal vesicle saccular, 235-270 long, extending posteriorly upto anterior margin of acetabulum. Genital pore ventral, to median of left caecum, preacetabular, situated a little posterior to caecal bifurcation.

Ovary follicular, follicles 80-130 in diameter, oval follicles connected by a narrow stalk, arranged in two groups, 4 to 5 follicles grouped on right side and 5 to 6 follicles on left side. Seminal receptacle saccular, preovarian, 165-190 long and 50-60 wide. Vitelline follicles small, rounded, in two broad lateral zones, extending from caecal bifurcation up to a little anterior to caecal ends. Uterus running between anterior border of posterior testis and cirrus sac. Metraterm tabular, thick-walled, 230-270 long. Eggs oval, operculate, 45-56 long and 23-34 wide. Excretory vesicle short, reaching to testis; excretory pore terminal.

Host : *Pomacanthus annularis* (Bloch.)

Site : Small intestine.

Locality : Bombay coast, Arabian Sea.

Frequency : 9 specimens from 1 host of 6 examined.

Remarks : Madhavi (1972) erected the genus *Lobatocreadium* with *L. manteri* as its type species. She transferred *Lepocreadium exiguum* Manter, 1963 to this genus *Lobatocreadium exiguum* (Manter, 1963) Madhavi, 1972 n. comb.. Now *Lobatocreadium* contains two species: *L. manteri* Madhavi, 1972 and *L. exiguum* (Manter, 1963) Madhavi, 1972. The new species differs from both these species in having suckers of equal size, vitellaria extending from caecal bifurcation upto a little anterior to caecal ends, specimens of larger size and eggs of smaller size. It further differs from *L. manteri* in that uterus running between anterior border of posterior testis and cirrus sac instead of running between anterior border of anterior testis and ovary and acetabulum is situated well posterior to caecal bifurcation and from *L. exiguum* differs in having ovary and testes and acetabulum separated from one another instead of close to each other, cirrus sac not extending upto anterior margin of acetabulum, vitellaria are not confluent posteriorly, caeca ending at anterior edge of posterior testis and in not having post testicular space.

The new species is named in honour of Dr. S. P. Gupta in recognition to his contribution to Helminthology.

ACKNOWLEDGEMENTS

The author is grateful to Dr. M. A. Beg for providing research facilities in Zoology Department and to Mr. Mohd. Mohsin, Principal (Shil National College) for encouragement.

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