

**On *Capsulodiplostomum crocodilinum* n. g., n. sp.
(Trematoda, Digenea), from the Indian crocodile
*Crocodilus palustris***

by

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The present communication deals with the description of a new genus of proterodiplostomine trematodes, collected from the intestine of a common Indian crocodile, popularly called "magar" in the native language. This crocodile was captured in the Robertson lake of Jabalpur. In total, five parasites were obtained, out of which three were studied in whole mounts and two in serial sagittal sections.

The work was carried out in the Department of Zoology, Government Science College, Jabalpur, M. P.

Family PROTERODIPILOSTOMIDAE Dubois, 1936

Subfamily Proterodiplostominae Dubois, 1936

Capsulodiplostomum, n. g.

Proterodiplostomidae, Proterodiplostominae. Pseudosuckers absent. Forebody foliate. Tribocytic organ about $\frac{2}{5}$ the length of the forebody, elliptical, papillate. Hindbody long, truncated, a constriction at its joint with the forebody and in continuation with the latter. Oral sucker and pharynx small; esophagus short. Ceca terminating in the posterior level of the posterior testis. Ventral sucker little larger than oral sucker, anterior to middle of the forebody. Testes tandem, close to each other, the posterior testis in middle of the hindbody. External seminal vesicle present. Muscular pars prostatica, ductus ejaculatorius

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and terminal part of uterus enclosed in a fibrous capsule. Ovary median, immediate to anterior testis; shell gland complex and yolk reservoir intertesticular; vitellaria spreading in fore and hindbody.

TYPE SPECIES: *Capsulodiplostomum crocodilinum* n. sp.

Capsulodiplostomum crocodilinum n. sp.

(Figs. 1 and 2)

DESCRIPTION: During life the worms are flesh coloured. They are divided into a forebody and a hindbody, with a constriction in between. The forebody is leaf-shaped and measures 1.19 — 1.75 mm in length and 0.49 — 0.70 mm in breadth at the level of the tribocytic organ. Hindbody is truncated, little larger, situated $\frac{2}{5}$ the length of the forebody from its anterior end, and measures 1.26 — 2.16 mm in length and 0.35 — 0.56 mm in breadth at the level of the testes.

The pseudosuckers are absent. The oral sucker is small, terminal, round, and measures 0.049 — 0.063 mm in diameter. The ventral sucker is a little larger, situated $\frac{2}{5}$ the length of the forebody from its anterior end, and measures 0.077 — 0.097 mm in diameter. The esophagus is very minute, measuring 0.021 — 0.025 mm. Ceca run laterally to tribocytic organ and reach up to the posterior level of the posterior testis, i. e., up to the middle of the hindbody.

The tribocytic organ is elliptic, papillate, and measures 0.476 — 0.798 mm in length ($\frac{2}{5}$ the length of the fore body); it bears 30 papillae.

The testes are round or slightly oval, equal or subequal, tandem, situated dorsally in the anterior half of the hindbody. Anterior testis measures 0.28 — 0.37 mm in length and 0.29 — 0.33 mm in breadth. Posterior testis is almost immediate to anterior, leaving a little intertesticular space for yolk reservoir and oötype and measures 0.32 — 0.43 mm in length and 0.32 — 0.43 mm in breadth. The seminal vesicle is tubular, winding, situated immediately behind the posterior testis. A muscular pars prostatica is present, supplied profusely by prostatic gland cells. The ductus ejaculatorius is small and opens into a reduced genital atrium. Genital cone and cirrus are absent. The entire pars prostatica, ductus ejaculatorius and the terminal part of the uterus are enclosed in a capsule having a thick wall of fibrous tissue — a character referred to in the generic name. Terminally, the genital atrium opens by a wide genital opening.

The ovary is oval, globular or transversely flattened in shape; it is situated dorsally immediate to the anterior testis, and measures 0.084 — 0.196 mm in length and 0.154 — 0.224 mm in breadth. Shell gland and yolk reservoir are intertesticular, the former occupying the right position and the latter the left position. A Laurer's canal is present. The uterus does not enter the forebody and opens between the genital atrium and sucker-like musculature. Eggs are few in number (maximum found is eleven), oval in shape and measure 0.084 — 0.091 mm in length and 0.070 — 0.072 mm in breadth.

The vitelline follicles are densely situated in the zone of the tribocytic organ, almost covering the latter; they extend anteriorly up to the ventral sucker and posterior to the middle of the posterior testis in the hindbody, forming two lateral columns.

The excretory system is composed of a tubular excretory bladder which runs up to the posterior level of the posterior testis; there it divides into two longitudinal arms which are connected with each other by anastomosing branches. The excretory opening is ventrolateral.

DISCUSSION

The present worms are being assigned to the family Proterodiplostomidae in having the body divided into fore and hind regions and lacking a cirrus pouch. Further, the author feels justified in including them in the subfamily Proterodiplostominae due to the distribution of vitellaria in both fore and hind bodies. The subfamily Proterodiplostominae includes four genera, *Proterodiplostomum* Dubois, 1936; *Archaeodiplostomum* Dubois, 1944; *Mesodiplostomum* Dubois, 1936 and *Pseudoneodiplostomum* Dubois, 1936.

The worms under study could not be included in any of the aforesaid four genera due to the presence of the fibrous capsule. Hence for the reception of these worms the genus *Capsulodiplostomum* n. g. is being created, and the name proposed for the new worm is *Capsulodiplostomum crocodilinum* n. sp. The new genus shows strong affinity with *Proterodiplostomum* in having a strongly developed pars prostatica.

KEY TO THE GENERA OF SUBFAMILY PROTERODIPILOSTOMINAE DUBOIS, 1936

- A. Prostate glands present. Ventroposterior diverticle absent in genital atrium. Tribocytic organ 1/3 to 1/4 as long as fore body B
- A. Distinct prostate glands absent. Ventroposterior diverticle present in genital atrium. Tribocytic organ 1/7 as long as fore body *Mesodiplostomum* Dubois, 1936.
- B. Paraprostate developed. Vitellaria extending beyond posterior testis (except *Capsulodiplostomum* n. g.). Forebody spatulate or leafy, never scoop-shaped C
- B. Paraprostate small, occupying only the central part of genital cone. Vitellaria never extending beyond posterior testis. Forebody scoop shaped *Pseudoneodiplostomum* Dubois, 1936.
- C. Paraprostate, ductus ejaculatorius and terminal part of uterus not enclosed into a fibrous capsule. Vitellaria extending beyond posterior testis. Genital cone present D
- C. Paraprostate, ductus ejaculatorius and terminal part of uterus enclosed in a fibrous capsule. Vitellaria never extending beyond posterior testis. Genital cone absent *Capsulodiplostomum* n. g.

- D. Paraprostate strongly developed, tubular. "Genital sucker" present. Hermaphroditic canal absent *Proterodiplostomum* Dubois, 1936.
- D. Paraprostate developed (not so strongly as in *Proterodiplostomum*), claviform. "Genital sucker" absent. Hermaphroditic canal present
 *Archaeodiplostomum* Dubois, 1944.

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Figs. 1-2. *Capsulodiplostomum crocodilinum* n. g., n. sp.

Fig. 1. Ventral view, showing internal anatomy.

Fig. 2. Median sagittal section.

a. t., anterior testis; c., caeca; d. ej., ductus ejaculatorius; e., egg; es., esophagus; e. sem. ves., external seminal vesicle; ex. bl., excretory bladder; ex. cor., excretory cornua; ex. o., excretory opening; f. c., fibrous capsule; f. b., forebody; g. a., genital atrium; g. o., genital opening; h. b., hindbody; o. s., oral sucker; ov., ovary; p., papilla; p. p., pars prostatica; ph., pharynx; p. t., posterior testis; sh. gl., shell gland; t. o., tribocytic organ; ut., uterus; v. d., vas deferens; vit., vitellaria; v. s., ventral sucker; y. r., yolk reservoir.

