

First record of metacercaria of a rare reptilian trematode *Kaurma* Chatterji, 1936 from a gastropod *Pila globosa* Swainson, near district Barabanki.



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Abstract : Chatterji, 1936 established the genus *Kaurma* Chatterji, 1936 with *E. longicirra* as its type specis, for the adult trematodes, collected from the intestine of a freshwater turtle *Emyda scutata* Peters, 1868 of Rangoon and placed it under the family Allocreadiidae Stossich, 1904 and the subfamily Allocreadiinae Looss, 1899. During course of present investigations on the trematodes of snails of district Barabanki, several specimens (37) of *Pila globosa* Swainson examined, the gut of only four was found infected with the metacercarial stage of trematodes. A careful and thorough examination revealed them to be of the genus *Kaurma* Chatterji, 1936 as they bear all the characters of the adult, except the eggs. Gastropods, in general act as intermediate hosts in the life cycle of trematodes but records of metacercariae or adults in *Pila globosa* are not many in India [Anjaneyulu (1967), Murty (1970) and Pandey (1973)]. The present contribution is second in its series by the present authors.

Key words: *Kaurma*, metacercaria, *Pila globosa*

Introduction

Pila globosa, commonly known as apple snail, an amphibious gastropod, is commonly found in ponds, pools, lakes, marshes, paddy fields, streams and rivers, having dense vegetation of Northern India and has also been reported from brackish waters. Its distribution ranges from Assam, Bihar, Himachal Pradesh, Jharkhand, Maharashtra, Madhya Pradesh, Meghalaya (Garo hills South), Orissa, Rajasthan, Uttar Pradesh, West Bengal but surprisingly not recorded in Punjab (Ramakrishna and Dey, 2007). It is a voracious feeder, consuming aquatic vegetation like *Pistia* and *Vallisneria*. It serves as a food resource of villagers and its shell is also used in traditional medicines.

Material and Methods

The snails were collected from 'Naya Tal' covering an area of about one acre in Garhi, near district Barabanki. They were brought to the laboratory in small earthen pots and maintained in small water pools. They were fed with *Vallisneria* and *Pistia* leaves and dissected at convenience. Almost all the body organs like foot, pulmonary sac, organs of pallial complex and gills were carefully examine under binocular microscope, in small petridishes containing normal saline. Larvae, thus collected, were first studied alive and subsequently flattened, with the help of a cover slip on slide, fixed overnight in 70% alcohol, stained with Aceto-alum Carmine, dehydrated in ascending grades of alcohol, cleared in Xylol and mounted in Canada Balsam. Figures were drawn with the help of drawing tube, attached to a Phase Contrast microscope (Olympus CX-41) and measurements (in millimeters) were taken with the help of an oculometer.

Description

Aspinose body is oval, 2.82 -3.10 mm x 0.88-1.53 mm. Oral sucker is spherical, sub-terminal 0.32-0.38mm x 0.27-0.37mm. Ventral Sucker is 0.28-0.46 mm x 0.27-0.45 mm, larger than oral sucker, situated in the middle of body. Prepharynx is indistinct, muscular pharynx measures 0.14-0.20mm X 0.15-0.23mm. Oesophagus is absent. Intestinal bifurcation, in some specimens, is partially overlapped by pharynx. Intestinal caecae are long, uniform in width and extend up to posterior extremity of body. Testes are tandem, transversely elongated, situated in the posterior third of body, 0.24-0.66mm x 0.13-0.22mm - 0.17-0.41mm x 0.14 - 0.29 mm respectively. Vas deferences runs anteriorly and opens in cirrus sac. Cirrus sac is saccular, broad in middle and narrow anteriorly and posteriorly, 0.11-0.24 mm x 0.06-0.11mm, anterior to ventral sucker slightly bending towards right side of body. It encloses a coiled vesicula seminalis, pars prostatica, ductus ejaculatorious and a cirrus. Genital pore is inter-caecal, towards right side of body. Ovary is globular, 0.11-0.15 mm x 0.11 - 0.13 mm, slightly towardly right of median line, situated posteriorly close to ventral sucker. Laurer's canal is not seen. Ootype is somewhat larger than ovary, 0.10-.15mm x 0.07-0.17 mm. Uterus is short, visible only in between anterior testis and ventral sucker. It arises from ootype, runs anteriorly in a zigzag manner and forms a muscular metraterm to open into genital atrium through female genital aperture. Vitellaria consists of large follicles and are distributed in extracaecal and intracaecal fields, from anterior border of intestinal bifurcation to posterior end of body, merging posteriorly. Eggs are absent. Excretory bladder is "V" shaped and excretory pore opens outside at

posterior end of body.

Discussion

Chatterji, 1936 established the genus *Kaurma* Chatterji, 1936 with *E. longicirra* as its type species, for the adult trematodes, collected from the intestine of a freshwater turtle *Emyda scutata* Peters, 1868 of Rangoon and placed it under the family Allocreadiidae Stossich, 1904 and the subfamily Allocreadiinae Looss, 1899. It is characterized by oval aspinose body, well developed suckers, oral sucker smaller than ventral sucker, oesophagus absent, pharynx well developed, intestinal caeca reaching posterior end of body, testes in posterior half of body, tandem, lobed, cirrus sac anterior to ventral sucker, having coiled vesicula seminalis, pars prostatica and ductus ejaculatorious, long and muscular

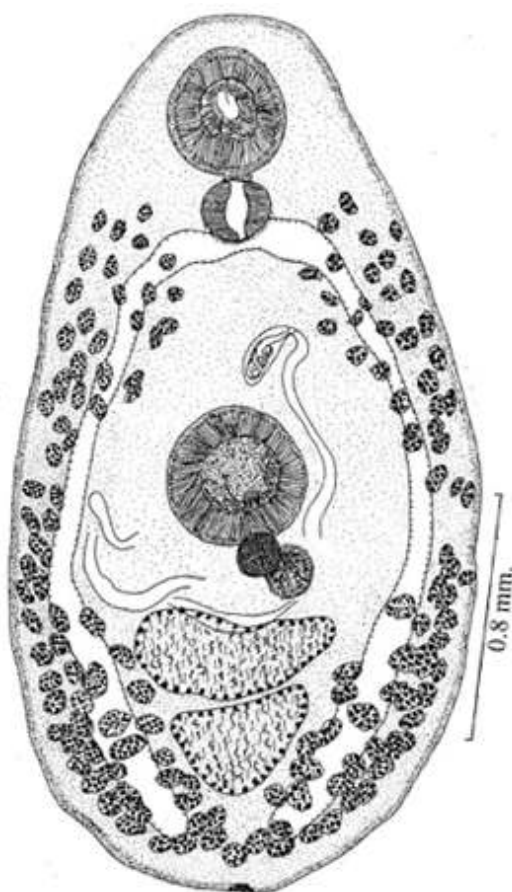


Fig. 1. Metacercaria of *Kaurma* Chatterji 1936

cirrus, ovary pretesticular extreme close to ventral sucker, receptaculum seminis present, metraterm well developed, vitellaria between pharynx and hind end of body and confluent behind testes, pre-testicular uterus. Since the metacercaria under study has almost all the characters of *Kaurma* except eggs, in all probability it belongs to the genus. Surprisingly since then, neither the larva nor the adult of this parasite has been reported in India by Indian workers till date though certain species have been reported from different regions in South East Asia (Yamaguti, 1958). Report of metacercarial stage from a snail, is quite significant in this region. Though adults could not be obtained, it is most likely that the fresh water turtles feed on infected snails and the larvae develop to become adults in final host. Specific diagnosis is not possible till we get the experimentally developed adults.

Acknowledgements

Facilities developed in the UGC-SAP (DRS-I) programme of the Department of Zoology, University, under the Thrust Area "Helminth Taxonomy" were utilized in the present work. One of us (S. Ray) also acknowledges the UGC, for the award of "Rajiv Gandhi Fellowship".

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