

Occurrence of a new digenetic trematode parasite of family Opisthorchiidae, Braun 1901, in freshwater fish, *Mystus vittatus* from Chapra, Bihar, India.

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Abstract : The present paper reports a new digenetic trematode parasite species of a freshwater fish, *Mystus vittatus* (Bl.) obtained from Dighwara fish market of Chapra, Bihar, India. The present species can be differentiated by other species in having, antero- posteriorly compressed contiguous testes, longer prepharynx and posterior extension of vitellaria, size of eggs, submedian ovary and smaller receptaculum seminis in relation to ovary.

IndexTerms – *Mystus vittatus*, trematode, fish, digenetic, opisthorchiidae.

I. INTRODUCTION

The genus, *Gomtia*, Thapar, (1930) belongs to the family Opisthorchiidae (Bl.). It comprises of the following species viz. *Gomtia piscicola*, Thapar, 1930, *Gomtia gagatia*, Dayal, 1949, *Gomtia lucknowia*, Dayal, 1949, *Gomtia thapari*, Agarwal and Singh, 1978 and *Gomtia attui*, Sabhyata, 2005. These species were reported from freshwater fishes of India.

In the present communication, a new species *Gomtia vittatusi* sp. nov. has been described in detail and compared with other species of this genus.

RESEARCH METHODOLOGY

(Material and methods)

The host fish *Mystus vittatus* (Bl.) was obtained from Dighwara fish market of Chapra, Bihar. Fishes were brought to the laboratory for collection of parasites. Visceral organ were dissected out separately in petridishes containing 0.7% saline.

The worms were picked up with the help of micro-dropper and collected in saline, fixed in A.F.A. (50% Alcohol, Formalin and Acetic acid in the ratio of 100:6:2.5) under slight pressure of cover slip for 24hours. After fixation parasites were kept in A.F.A. for some time, washed in 70% alcohol to remove excess of fixative and finally preserved in 70% alcohol containing 5% glycerin, stained with acetic alum carmine, differentiated in acid water, dehydrated in graded series of alcohol, cleared in clove oil and mounted in Canada balsam.

The live worms were also examined under microscope particularly for the excretory system, vesicula seminalis and ventrogenital sac and other structures in light of the work done by Stunkard (1975). The diagrams were made with the help of camera lucida and measurements (in millimeter) were taken using a stage micrometer.

RESULTS AND DISCUSSION

Two specimens of this worm were collected from the intestine of a freshwater fish, *Mystus vittatus* (Bl.) from Dighwara fish market of Chapra, Bihar, India.

Description

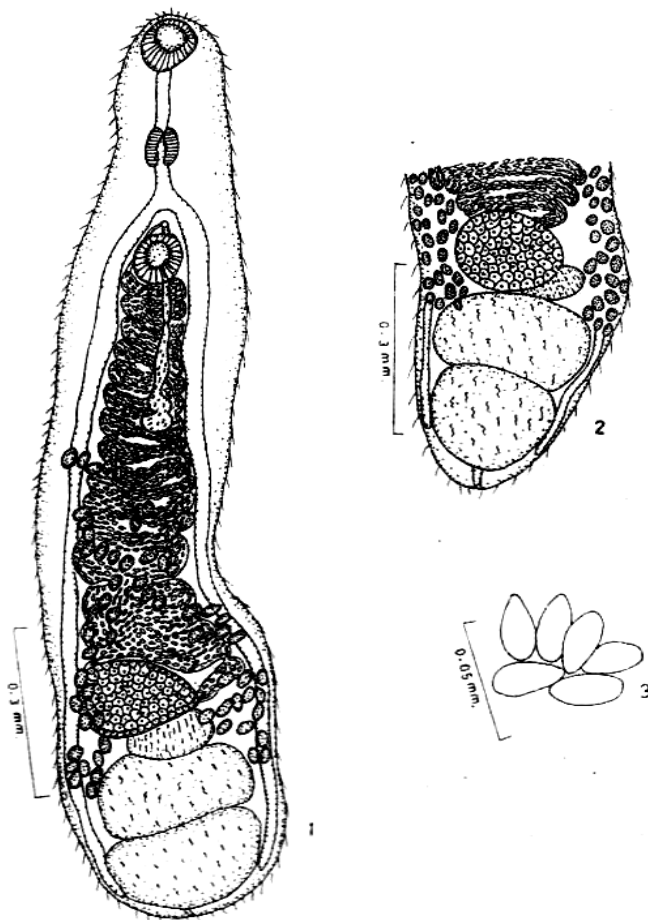
Body small, elongate spinulate with rounded narrow anterior and bluntly pointed broad posterior end, 1.42 to 1.62 mm long and 0.35 to 0.36 mm wide. Oral sucker sub-terminal, sub-spherical, 0.08 to 0.09 mm long and 0.07 to 0.10 mm wide. Pre-pharynx long, tubular 0.10 to 0.13 mm long. Pharynx well-developed, ovoid, 0.06 to 0.07 mm long and 0.04 to 0.05 mm wide. Oesophagus tubular, smaller than pre-pharynx, 0.05 to 0.07 mm long ending shortly of posterior extremity not surpassing posterior testes. Ventral sucker median, pre-equatorial, sub-spherical, 0.08 to 0.10 mm long and 0.07 to 0.08 mm wide at 0.39 to 0.44 mm from anterior end of body.

Excretory bladder straight, tubular dorsal to testes (observed in live worms), excretory pore terminal.

Genital pore median, pre-equatorial, pre-acetabular, intercaecal at 0.37 to 0.40 mm from anterior end of the body.

Testes entire, two in number, tandem, lying near posterior extremity. Anterior testes compressed antero-posteriorly, 0.13 to 0.15 mm long and 0.24 to 0.26 mm wide at 1.08 to 1.21 mm from anterior end of body. Posterior testes 0.14 to 0.18 mm long, 0.20 to 0.27 mm wide at 0.02 to 0.04 mm from posterior end of body. Cirrus sac absent, vesicula seminalis long, tubular with vesicular lower part lying free in parenchyma up to 0.62 to 0.65 mm from anterior end of body.

Ovary entire, sub-median, sub-spherical or ovoid, post-equatorial, pre-testicular, 0.14 to 0.15 mm long and 0.18 to 0.20 wide at 0.94 to 1.13 mm from anterior end of body. Receptaculum seminis saccular, median or sub-median, smaller than ovary, 0.06 to 0.09 mm long and 0.11 to 0.14 mm wide lying either between ovary and anterior testis pressing them or postero-lateral to ovary above anterior testis. Vitellaria follicular, extending along caeca from a little behind the vesicula seminalis up to anterior third or mid level of anterior testis. Uterus highly coiled, intercaecal, extending between ovary and ventral sucker, opening terminally into genital pore. Eggs numerous, small, oval, 0.027 to 0.030 mm long and 0.009 to 0.013 mm wide.



Family Opisthorchiidae Braun, 1901, *Gomia vittatusi* sp. nov. fig. (1-3)
1- Entire, ventral view, 2- Posterior end of body, 3- Eggs

Host	:	<i>Mystus vittatus</i>
Location	:	Intestine
Locality	:	Dighwara fish market
Prevalence	:	2 specimens from 2 hosts, out of five examined

Discussion

The present form closely resembles *Gomia piscicola* Thapar, 1930 in the arrangement of gonads and anterior extension of vitelline follicles. It differs however, in having antero-posteriorly compressed, contiguous testes, longer pre-pharynx and in the posterior extension of vitellaria and size of eggs. It also differs from *Gomia guptai* sp. nov. in having sub-median ovary, smaller receptaculum seminis in relation to ovary, much condensed testes, ovary and receptaculum seminis in posterior region and in the general body shape. Accordingly, it is regarded as a new species with the specific name *Gomia vittatusi* sp. nov. The new species is named after its host, *Mystus vittatus* from which the worm is collected.

ACKNOWLEDGMENT

The authors are thankful to the Principal, D.A-V. College, Kanpur and Head of the department of Zoology, D.A-V. College, Kanpur, C.S.J.M. University, Kanpur, India for providing the laboratory facilities and continuous encouragement and help.

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