

A digenetic trematode parasite, *Orientocreadium striatusae* n.sp. from fresh water fish, *Channa striatus*

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ABSTRACT

The present new digenetic trematode parasite, *Orientocreadium striatusae* n.sp. was collected from freshwater fish, *Channa striatus* at Paithan, Aurangabad district, M.S., India. The present new species, *Orientocreadium striatusae* differs from known species of genus *Orientocreadium* in having distinctive characters such as shape and size of body; arrangement, shape and size of suckers, reproductive organs and vitellaria.

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KEY WORDS : *Channa striatus*, *Orientocreadium striatusae*. Trematode parasite

Introduction

The *Channa striatus* is an important source of protein and consumed as food in different countries. It is used for medical purposes such as, preventing scarring, recovering from surgery, boosting energy, provides healing power and it is used in pharmaceutical industries. The present new species, *Orientocreadium striatusae* was collected from *Channa striatus*. The genus *Orientocreadium* was created⁸. The genus *Orientocreadium* placed in family Allocreadiidae. The various authors described the different species of genus *Orientocreadium* such as *O. batracoides*⁸ syn *O. indicum*⁴; *O. pseudobagri*¹⁰ syn. *Paratormopsolus siluri*¹; *O. raipurensis*⁵; *O. dayala*⁵; *O. umadas*⁶; Later on a new species *O. lazeri* was added from the host *Clarias batrachus* in Sudan².

A new species *O. chaenogobii* was added from the rectum of *chaenogobius laevis* in Shibechea, Kushiro⁷. Later on two species were added i.e. *O. pseudobagri* from the rectum of *Perccottus glegni* and *O. elegans* from yellow catfish, *Pelteobargus fulvidraco* in Russia⁹. One more new species *O. lucknowensis* was added from intestine of *Clarius batrachus*³.

Material and Method

Fresh water fish, *Channa striatus* was collected from Paithan, Aurangabad district, (M.S.), India. Trematodes were collected from the buccopharyngeal region of fish, washed in distilled water, flattened between cover glass and slides, fixed in 4% formalin. Trematode worms were removed from preservatives, washed in distilled

water, stained with Harri's Haematoxyline, dehydrated in ascending series of alcoholic grades, cleared in xylene, mounted in DPX. Drawings were made by Camera Lucida and all measurements were taken in millimeter, identification by Systema Helminthum trematode¹¹.

Description

The present worm is elongated, spinous, whitish or cream colour in live condition, their movement as like leech ? contraction and expansion. The anterior-posterior ends are rounded. It measures 11.2272 mm in length and 2.9595 mm in breadth. The oral sucker oval, sub-terminal and it measures 0.3977 mm in length and 0.4204 mm in breadth. Pharynx is oval and overlaps to the oral sucker, measures 0.1818 mm in length and 0.1590 mm in breadth, esophagus pouch is somewhat oval, overlap to the pharynx and it measures 0.3295 mm in diameter. Ventral sucker rounded and located below the cirrus pouch and it measures 4.2044 mm in diameter. Ventral sucker larger than oral sucker. Intestinal caeca elongated, bifurcate and posterior extremity (Fig. 1).

The male reproductive system, cirrus pouch is well developed at near the gonopore and between the esophagus and acetabulum. Gonopore small, rounded, cirrus is located anterior to the genital pore, and it is tube like and measures 0.1022 mm in length and 0.02272 mm in breadth. Cirrus pouch large and measures 1.0680 mm in diameter. Ejaculatory duct short, tube like anterior of pars prostatica or attached to the genital pore, measures 0.1250 mm in length and 0.02272 mm in breadth. Pars prostatica oval and not distinct from the ejaculatory duct

TABLE-1: Comparative chart of *Orientocreadium* species closer to present form

SPECIES	1	2	3	4	5	6
Character	<i>O. batracoides</i> ⁸	<i>O. indicum</i> ⁴	<i>O. pseudobagri</i> ¹⁰	<i>O. raipurensis</i> ⁵	<i>O. dayala</i> ⁵	<i>O. umadas</i> ⁶
Oral sucker	Oval, sub-terminal	Oval, sub-terminal	Oval, sub-terminal	Smaller than ventral sucker	Smaller than ventral sucker	Sub-terminal
Esophagus	Short	Short	Short	Short	Short	Present
Pharynx	Oval	Oval	Oval	Oval	Oval or rounded	Present
Acetabulum	Rounded	Larger than oral sucker	Rounded	Rounded	Larger than oral sucker	Equal size of oral sucker
Seminal vesicles	Bipartite (aspid)	Bipartite (spined)	Bipartite (unspined)	Bipartite (unspined)	Bipartite	Bipartite
Testes	Two, slightly oblique.	Two, may be tandem.	Two, slightly oblique.	Two, slightly oblique	Tandem	May be tandem or slightly oblique.
Ovary	Rounded	Circular.	Rounded	Rounded	Rounded or circular	Circular
Vitelline follicles	United in the form of lattice.	Extended more anteriorly and were not united to form of lattice.	Not confluent	Distribution of vitellaria which do not unite to form a lattice	Lateral side of the uterus.	United in the form of lattice
Excretory Bladder	Simple, bag shaped	Simple, elongated and bag shaped.	Wide tube	Tubular.	Tubular	Tubular

and surrounded by the pars prostatica cells. Vesiculaseminalis is oval and bipartite measures 0.7386 mm in diameter, internal seminal vesicle surrounded by the pars prostatica cells (Fig. 2). Testes are two, large located below ovary and uterus. Anterior testes transversely elongated, overlap the uterus and measures 1.1703 mm in length and 0.6250 mm in breadth. Posterior testes bean shaped, slightly lobed and it measures 1.1363

mm in length and 0.6818 mm in breadth.

The female reproductive system, ovary is longitudinally elongated or oval located above anterior testes it measures 1.1817 mm in length and 0.9207 mm in breadth. Seminal receptacle is well developed beside the ovary and overlap the uterus, it measures 1.0680 mm in diameter. Mehl's gland is rounded and located below the seminal receptacle. Uterus much coiled at between

SPECIES	7	8	9	10	11	PRESENT FORM
Character	<i>O. lazeri</i> ²	<i>O. chaenogobii</i> ⁷	<i>O. pseudobagri</i> ⁹	<i>O. elegans</i> ⁹	<i>O. lucknowensis</i> ³	<i>O. Orientocreadium striatusae</i>
Oral sucker	Oval, sub-terminal	Sub-terminal or terminal	Sub-terminal	Sub-terminal	Terminal	Oval, sub-terminal
Esophagus	Short	Present	Present	Present	Short, tubular or globular	Present
Pharynx	Present	Globular	Cruciform identification	Cruciform identification on dorsal surface.	Ovoid, muscular	Oval
Acetabulum	Larger than oral sucker.	Larger than oral sucker	Equal size of oral sucker.	123x110 mm.	Sub-spherical	Rounded
seminal vesicles	Well developed.	Elongated	Bipartite	Bipartite	—	Bipartite
Testes	Equal size	Two	Spherical or oval in shape.	Two, oval and tandem.	Tandem, median, post ovarian inter-caecal, unequal, oval	An anterior testis is transversely elongated and posterior testes bean shaped.
Ovary	Rounded	Oval	Single, entire midline, slightly right of midline.	Single, (112 x 84 mm).	Spherical oval	Longitudinally
Vitelline follicles	United in the form of lattice	Lateral side of the ceca	follicular	Follicular	Follicular	Complex, confluent at the forebody.
Excretory Bladder	Sac like	—	Y-shaped	Y-shaped.	Tubular	Y-shaped.

the ovary and anterior testes and overlap to the vitellaria. Vitellaria are complex, confluent extend from the ventral sucker to posterior region. Eggs are not developed in the uterus (unembryonated). Excretory pore small, rounded at the posterior extremity. Excretory bladder Y-shaped (Fig.1).

Discussion

Genus *Orientocreadium* was created⁸ with its type species *Orientocreadium batracoides* from *Clarias batrachus* in Philippines. The present species of trematode parasite was identified by Systema Helminthum trematode¹¹. After identification, the present trematode

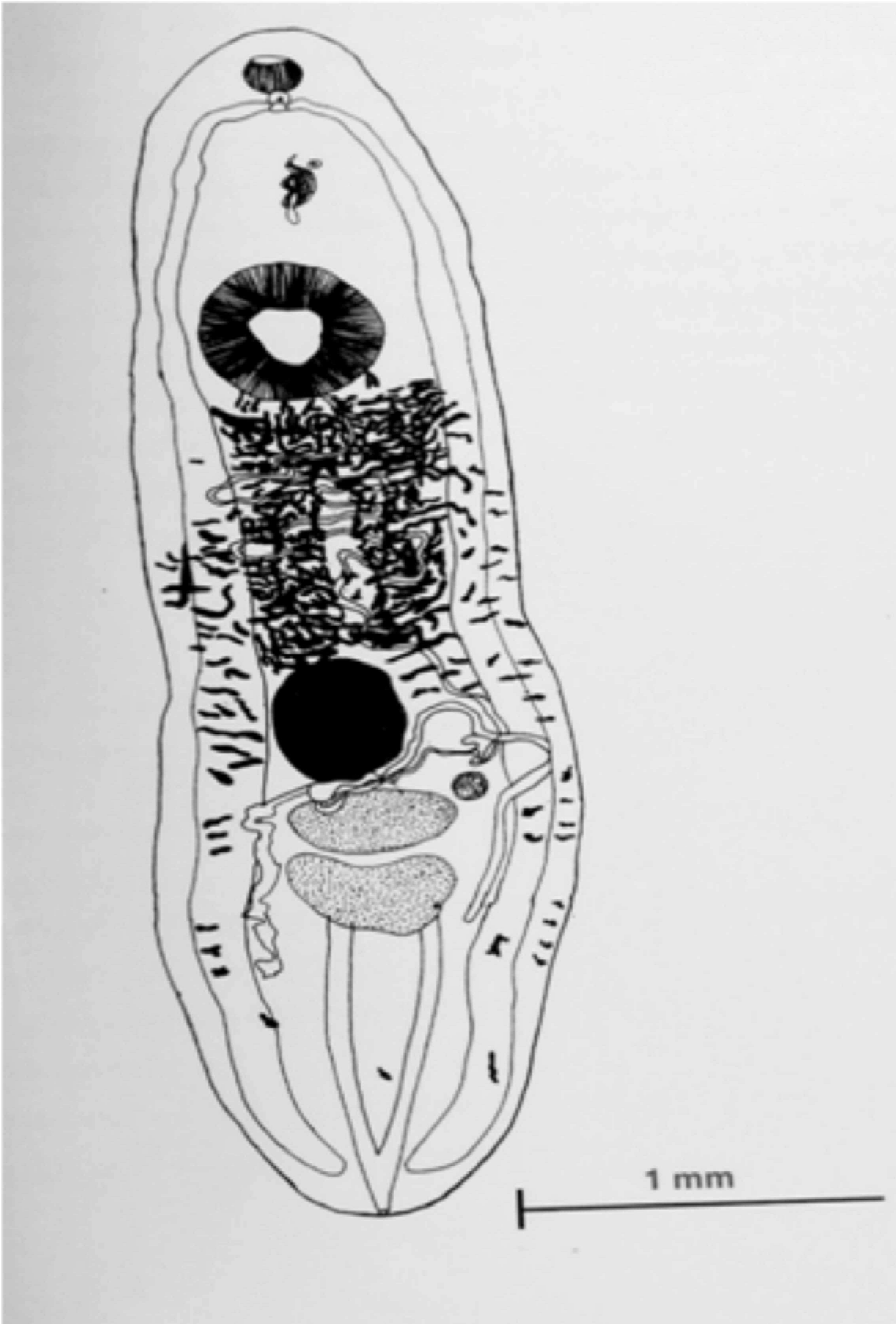


Fig.1: *Orientocreadium striatusae* n.sp.



Fig. 2: Cirrus pouch of *Orientocreadium striatusae* n.sp.

parasite discussed with previous known species of genus *Orientocreadium*.

The present trematode species is closer with the species, *Orientocreadium batracoides*⁸; *O. indicum*⁴; *Orientocreadium pseudobagri*¹⁰ syn. *Paratormopsolus siluri*¹; *Orientocreadium raipurensis*⁵; *Orientocreadium dayala*⁶; *Orientocreadium madas*⁶; *O. lazeri*² in having oral sucker oval, subterminal, oesophagus present, pharynx oval, ventral sucker rounded, seminal vesicle is bipartite, however, it differs from above species : the ovary is (longitudinally elongated or oval vs rounded), testes (two, elongated to bean shaped vs slightly oblique), and excretory bladder (Y shaped vs tubular).

The present worm differs from the species *O.*

*chaenogobii*⁷ which is having seminal vesicles (bipartite vs tubular), uterus is much coiled at the level of acetabulum to posterior end and vitellaria are (confluent in middle portion of the body vs oval and lateral side of the intestinal caeca).

The present worm differs from the species *O. pseudobagri* Yamaguti and *O. elegans*⁹ in having pharynx is oval vs cruciform identification, testes are elongated, bean shaped to slightly lobed vs oval and vitellaria confluent or complex vs follicular.

The present trematode parasite differs from *O. lucknowensis*³ in having body (spinous vs aspinous), oral sucker (sub terminal vs terminal), oesophagus tubular, ventral sucker (rounded vs sub spherical), testes (transversely elongated and bean shaped, slightly lobed vs tendem, oval), ciuurs sac (between intestinal bifurcation and ventral sucker vs between ovary and intestinal bifurcation), ovary (longitudinally elongated or oval vs spherical), vitellaria (complex, confluent vs follicular), excretory bladder (Y- shaped vs tubular).

Taxonomical summary

Type Species	:	<i>Orientocreadium striatusae</i> n.sp.
Host	:	<i>Channa striatus</i>
Habitat	:	Buccopharyngeal region
Locality	:	Paithan, Aurangabad District
Deposition	:	Helminthology laboratory, Department of Zoology, Dr. Babasaheb Ambedkar Marathwada University, AURANGABAD (MS) INDIA.

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