A New Digenean Trematode of Genus Orientocreadium Tubangui, 1931 Parasitizing Fresh Water Fishes of Uttar Pradesh (India)

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Abstract:
The present investigation is the study on helminth fauna from economically important edible food fishes of Lucknow, Uttar Pradesh. The various species of digenetic helminth parasites recovered from river Gomti. Some species identified were older with known information and few are newly identified for Science stream. The current paper involves the detailed description and study of these new species Orientocreadium lucknowensis sp.nov found in the intestine of Clarius batrachus (Jord.). This species alters the properties like body aspinose instead of spinose and extension of vitellaria from anterior level of ovary up to hind end of body instead of middle of ventral sucker up to posterior end of body. These differences are considered as specific variation, thus the species designated as a new species with specific name Orientocreadium lucknowensis sp. nov.

Keywords: Digenea, Fresh water fish, Orientocreadium, Trematode

Introduction:
Fish are good source of quality protein, but various diseases including parasitic infections pose a threat to fish health. Several reports reveal that consumption of undercooked fishes serve as potant source of infection to humans and they are widely distributed across the world. This paper is an approach to add on to the sparse knowledge of Orientocreadium Tubangui, 1931 of fresh water fishes from the river Gomti, Lucknow, Uttar Pradesh (India). Many Indian as well as foreign workers have collected more efficient and adequate knowledge about Orientocreadium Tubangui, 1931. During the survey of helminth parasites, collected four different species of the genus Orientocreadium were found, out of these one is new and other species are redescribed. The new species which are found in the intestine of fresh water fish Clarius batrachus (Jord.).

Materials and Methods:
Sampling of Fish and Parasites
The large numbers of fresh water edible food fishes were collected from river Gomti (26°51’30” North 80°56’14” East) and local fish market at Lucknow. The fish specimens were identified by standard fish books and alimentary canal of these organisms were studied by cut opening the body and other organs like liver, kidney, gall bladder, heart and gills. Later helminthes parasites were collected and separated in Petri dish containing normal saline solution (0.9%). The trematode parasites were extracted and kept in small petridish containing normal saline. The above genus was recovered from the intestine of Clarius batrachus (Jord.). The parasites were repeatedly washed with normal saline and fixed in AFA fixative (50% Alcohol, Formalin and Acetic acid in the ratio of 100:6:2.5) and kept in 70% Ethanol under slight pressure of cover glass for 24-48 hrs. The parasites were preserved in 70% alcohol containing 5% glycerin for long time. The parasites were processed through descending grades of Ethanol (50% & 30%) and brought into the water. They were stained in Aecoalum carmine stain, differentiated in acid water, dehydrated through ascending grades of ethanol (30%, 50%, 70%, 90% and absolute alcohol). Parasites were dealcoholized and cleared in xylol and mounted in Canada balsam or DPX. The diagrams were made by Camera Lucida and all measurements taken in millimeter. Unless otherwise stated. Camera Lucida diagrams, identified by Sytema Helminthol (Yamaguti, 1954).

Result and Discussion:

Description
Family: Allocreadiidae (Stossich, 1903) Odhner, 1914
Subfamily: Orientocreadiinae Tubangui, 1931 Orientocreadium lucknowensis sp. nov.
Body elongated aspinose, 0.98 - 1.52 mm long, 0.41 - 0.60 mm wide. Oral sucker terminal, 0.10 - 0.15 mm long, 0.09 - 0.18 mm wide. Pre-pharynx absent. Pharynx ovoid, muscular 0.05 - 0.13 mm long, 0.06 - 0.12 mm wide. Oesophagus, short, tubular or globular, 0.05 – 0.07 mm long, 0.03 – 0.04 mm wide. Intestinal caeca simple, narrow, extending up to hind end of body. Ventral sucker sub-spherical, larger than oral sucker, overlapping left intestinal caeca, 0.12 - 0.18 mm long, 0.14 - 0.2 mm wide, at 0.25 - 0.38 mm from anterior extremity.

Excretory bladder tubular; excretory pore terminal. Genital pore median, lying near anterior margin of ventral sucker at 0.2 - 0.37 mm from anterior extremity. Testes two, tandem, median, post ovarian inter-caecal, unequal, oval. Anterior testis 0.15 - 0.23 mm long, 0.18 - 0.3 mm wide, at 0.48 - 0.75 mm from anterior extremity.

Posterior testis 0.16 - 0.27 mm long, 0.23 - 0.28 mm wide, at 0.61 - 0.94 mm from anterior extremity. Cirrus sac lying between ovary and intestinal bifurcation and overlapping acetabulum, enclosing vesicula seminalis interna and Pars-prostatica 0.15 - 0.31 mm long, 0.04 - 0.11 mm wide, at 0.2 - 0.37 mm from anterior extremity. Vesicula seminalis externa 0.06 - 0.12 mm long, 0.03 - 0.09 mm wide, vesicula interna 0.05 - 0.1 mm long, 0.03 - 0.06 mm wide. Pars-prostatica tubular 0.03 - 0.08 mm in length. The space around pars-prostatica is filled with prostate gland cells in cirrus sac. Ovary spherical, lying just behind cirrus sac 0.14 - 0.17 mm long, 0.14 - 0.19 mm wide, at 0.37 - 0.58 mm from anterior extremity. Receptaculum seminis small, overlapping ovary, 0.05 – 0.06 long, 0.015 – 0.020 mm wide.

Vitellaria follicular, extending from anterior level of ovary up to hind end of body. Uterus inter-caecal, extending entire posterior part of body. Eggs numerous, oval, non-operculated 0.03 - 0.04 mm long, 0.01 - 0.02 mm wide.

**Host** : *Clarius batrachus* (Jord.)

**Location** : Intestine

**Locality** : Lucknow

**Prevalence** : Four specimens from three hosts out of forty examined.

The present form belongs to the genus *Orientocreadium* Tubangui, 1931 comprises following species viz. *O. batrachoides* Tubangui, 1931; *O. pseudobagri* Yamaguti, 1934; *O. indicum* Pande, 1934; *O. raipurensis* Saxena, 1958; *O. dayalai* Saxena, 1958; *O. umadasi* Saxena, 1960, *O. ottoi* Agrawal, 1966 and *O. batrachoides* Pandey, 1972 are known so far.

The present form closely resembles with *Orientocreadium batrachoides* Tubangui,1931; *O. Pseudobagri* Yamaguti, 1934; and *O. ottoi* Agrawal, 1966 in having body elongated, excretory bladder tubular, Ventral Sucker larger than Oral Sucker but differs from *O. batrachoides* and *O. pseudobagri* in the presence of Receptaculum seminis and with *O. ottoi* in having body aspinose instead of spinose and extension of vitellaria from anterior level of ovary up to hind end of body instead of middle of ventral sucker up to posterior end of body.
Conclusion:
Thus on account of above mentioned differences as against all those described earlier, the present form deserves the status of a new specific name Orientocreadium lucknowensis sp. nov.

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