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On a new species of the genus *Opisthorchis* Blanchard (1895)¹ from *Rita rita*.

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Abstract:- A new termatode of the genus *Opisthorchis* has been described from *Rita rita*, compared with the existing species & discussed. The authors have reasons to consider the fluke under discussion to be new to the science of helminthology. The description proceeds with an introduction. Principle measurements in mms.

L x B – 8.46 x 1.296; oral sucker L x B – 0.19 x 0.18 prepharynx present, pharynx present 0.126 x 0.108; oesophagus 0.27, caecae long reach post end; testes lobulated T1 0.738 x 0.576 at 0.918 from post end, T2 0.828 x 0.648 at 0.162, Gp-preacetabular, ovary 0.306 x 0.36 pre testicular seminal receptacle 0.27 x 0.396.

Key words: *Opisthorchis ritai*, new species.

INTRODUCTION

There are several species of the genus *Opisthorchis* reported from fishes, birds and mammals. Normally the *Opisthorchis* species are found in the bile duct and gall bladder of their respective host. In the subfamily *Opisthorchiinae* Looss (1899)² there are four genera viz; *Cladocystis* Poche (1926)³, *Gomtia* Thapar (1930)⁴, *Thaprotrema* Gupta (1955)⁵ and *Opisthorchis* Blanchard (1895)¹.

In 1988 another genus *Agarwalotrema* was added by Sahay *et al* (1988)⁶ under the said subfamily.

Following species of *Opisthorchis* are reported from fishes.

1. *Opisthorchis piscicola* Odhner (1902)⁷ in *Gymnarchus niloticus* inhabiting Nile river.

2. *Opisthorchis pedicellatus* Verma (1927)⁸ (Syn. *O. pedicellatus minuta* Mehra, 1941-Gupta 1957 Bisseru (1957)⁹ in the gall bladder of *Rita rita*, *R. pavementata* and from *Bagarius yarrellii* (the river Ganges and Yamuna, India).
3. *Opisthorchis gomti* Thapar. 1930 (Mehra, 1941)¹¹ in *Bagarius yarrellii*. *Gogatia cenia* from the river Gomti at Lucknow, the river Ganges & Yamuna at Allahabad).
4. *Opisthorchis pedicellataus minutus* Mehra (1941)¹⁰ in *Mystus seenghala*. *Wallago attu*, (Allahabad).
5. *O. vittalani* Dayal & Gupta (1954)⁵ in *Rita rita* (Lucknow).
6. *O. parasiluri* Long *et Lee* (1958)¹³ in *Parasilurus asotus* (Taihu, China).
7. *O. mehrai* Agarwal (1959)¹⁴ in *Rita pavementata* (India).
8. *O. thaparae* Agarwal (1959)¹⁴ in *Wallago attu* (India).

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9. *O. gorakhpurensis* Rai (1971)¹⁶ in *Mystus vittatus* (Gorakhpur, U.P.).
10. *O. johriai* Dan & Sahay (1989)¹⁷ in *Labeo labeo* at Ranchi.

MATERIALS AND METHODS

The termatodes were collected from *Rita rita* (at Danapur, Patna), fixed in A.F.A. stained in Gower's stain dehydrated in ascending series of alcohols, treated with methyl salicylate & Benzene, mounted in D.P.X.

DESCRIPTION:

(All instruments in mms)

Body long, lanceolate, spines present on body surface upto ovary. Measures 8.46 x 1.296. oral sucker terminal 0.198 x 0.18, pre-pharynx present, pharynx well developed muscular 0.126 x 0.108 oesophagus long 0.27, bifurcates into two long intestinal caecae, straight terminates at posterior end. Acetabulum larger than oral sucker 0.216 x 0.27. distance between oral sucker and acetabulum 1.296.

Testes, slightly tandem at posterior extremity post ovarian, anterior testis 0.738 x 0.576 and 0.918 from posterior extremity is sub median round 0.306 x 0.36, pretesticular, seminal receptacle 0.27 x 0.396 situated near ovary.

Vitelline follicles in lateral margin of body, extends from the posterior level of acetabulum to the anterior end of ovary. Uterus winding in transverse coils, touch intestinal caeca.

Eggs, yellow, excretory vesicle sigmoid, pore at posterior end of body.

DISCUSSION

Yamaguti (1971)²¹ mention four genera viz; *Cladocystis*, *Gomita*, *Opisthorchis* & *Thaparotrema* under the subfamily *Opisthorchiinae*. But *Gomita* according to Bisseru (1957)⁹ is a synonym of *Opisthorchis* to which the present authors agree.

Mehra (1980)¹⁰ mention three subgenera under the genus *Opisthorchis* viz., *Nigerina* Bough (1958)¹⁹, *Opisthorchis* Erhardt (1935)²⁰ and *Amphimerus* Erhardt (1935).

Mehra (1980)¹¹ wrote after *Opisthorchis* Erhardt (1935)²⁰ which he corrected by adding a foot note

Blanchard (1995)¹ in place of Erhardt (1935)²⁰

Present fluke falls under the genus *Opisthorchis*. Since *O. piscicola* Odhner (1902)⁷ and *O. parasiluri* Long & Lee (1958)¹³ are from the hosts inhabiting Nile river, and the trans-oceanic migration of neither principle nor intermediate hosts are possible hence present specimen has not been compared with the above species.

Following the key to the Indian species of *Opisthorchis* (*Opisthorchis*) parasitic in fishes as provided by Mehra (1980)¹¹ (page 346-47)- The Fauna of India adjacent countries *Platyhelminthes* Vol-I Trematoda, Zool. Survey of India) the fluke under investigation fall: in the category where vitellaria commence behind acetabulum as such it differs from *O(O) vitellani* Gupta (1959)¹² where vitellaria commence a little in front of acetabulum extending up to the posterior boundary of T1. *O(O) vittalani* lacks prepharynx has excretory vesicle Y shaped, oral sucker larger than ventral sucker, anterior testis on the right side or a little posterior or near the level of ovary (present fluke does not show these features.

Amongst the Indian species which shows vitellaria commencing behind acetabulum are *O(O) pedicellata* Verma (1927)⁸ *O(O) gomtii* Thapar (1930)⁴ Mehra (1941)¹⁰ *O(O) mehrai* Agarwal (1959)¹⁴; *O(O) gorakhpurensis* Rai (1971)¹⁶ and *O(O) johriai* Dan et Sahay (1989)¹⁷.

O(O) pedicellata Verma (1927)⁸ has been considered by Gupta (1959)¹¹ and Bisseru (1957)⁹ to be synonym of *O(O) pedicellata minuta* Mehra (1941)¹⁰ to which present authors do not agree rather consider the latter to be synonym of Verma's species. In *O(O) pedicellata* Verma (1927)⁸ testes are oblique, tandem close to each other T2 – 3-5 lobed, T1 roughly triangular 3-5 lobed displaced to left and separated from T2 by excretory vesicle stem which is sigmoid running between testes. Excretory vesicle stem bifurcates into unequal arms behind receptaculum seminis. Left caecum is shorter than right ovary is pear shaped, (these features are not met with the present fluke).

In *O(O) gomtii* oral sucker is larger than acetabulum, prepharynx and oesophagus are equal, anterior testes partly overlaps the posterior testis, vitellaria extend from just behind or posterior end of seminal vesicle to posterior end of ovary, uterine coils mostly interracial but overlaps caeca.

These features are not met with the present fluke. Besides the above the genus *Gomtia* has been synonymised by Bisseru (1957)⁹ with the genus *Opisthorchis*.

In *O(O) pedicellata minuts* Mehra (1941)¹⁰, the two suckers are equal in size prepharynx is very small; caeca crenated upto acetabulum, testes are with irregular margin (not lobed), anterior testis smaller nearly triangular, posterior testis rounded, receptaculum seminis pear shaped equal in sized to ovary or even larger, vitellaria from behind acetabulum to posterior margin of ovary (these features are not met within the fluke under discussion).

In *O(O) mehrai* Gupta (1959)¹² syn. *Thaparotrema vitallani* Gupta (1959)¹² oral sucker is oval, acetabulum is smaller than oral sucker, caeca with crenate margins, receptaculum seminis behind intestinal bifurcation to hinder end of anterior testis, excretory vesicle Y shaped with long sigmoid stem and swollen short cornua at its anterior end.

These features are not met with present fluke.

When compared with *Opisthorchis (O) thaparae* Agarwal (1959)¹⁴ following difference were noted.

The length breadth ratio in the fluke under reference is 1:6.52 but this ratio is 1:7.6 in *O(O) thaparae*. In *O(O) thaparae* the testes and ovary are with irregular margin but oval & with entire margin in the fluke under reference.

O(O) gorakhpurensis Rai (1971)¹⁶ has testes entire, oblique diagonal in position, ovary is spherical, vitellaria extends from behind acetabulum to the middle of testicular zone with Y shaped excretory stem bifurcating near ovary (these conditions are not met in the flukes under reference). Srivastava (1982) considered *O(O) gorakhpurensis* to be a synonym of *O. pedicellata* Verma (1983)⁸. Agarwal and Singh (1978)¹⁵ described *O(O) thapari* but again Gupta & Saxena (1983)¹⁸ described *O(O) thapari*. Same nomenclature cannot be given to two species hence the present authors agree with Dan & Sahay in giving a new name to *O(O)thapari* described by Gupta and Saxena (1983)¹⁶ as *O(O) aori*. The species however is synonym of *O(O) pedicellata*.

In *O. johriai* Dan and Sahay (1989)¹⁷ vitelline follicles extend from behind acetabulum, receptaculum seminis is bipartite (not in the fluke under reference).

Under the circumstances the authors consider the present fluke to be new to science of helminthology and a

name *Opisthorchis (Opisthorchis) ritai* is proposed for its reception.

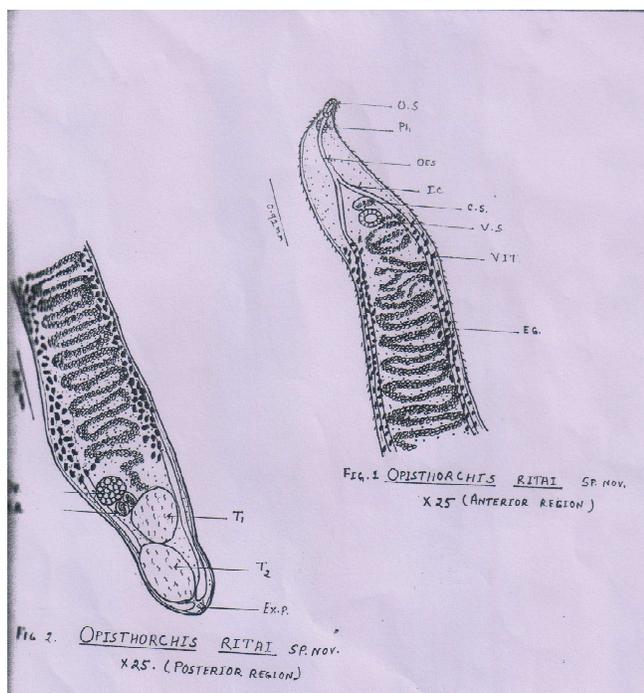
Host	-	<i>Rita rita</i>
Locality	-	Danapur
Location	-	Gall bladder.

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Fig : *Opisthorchis (O) ritai*



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