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## Study of a New Species of Trematode Parasite Found in the Fresh Water Fish Rita Rita from River Ganga at Kanpur

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### Abstract

This new species has been found in Rita rita fish collected from river Ganga at Kanpur. The trematode parasite was identified as *Nocolla sinhaei* and compared with all known species of genus *Nicolla fotedari* and *Nicolla wisiniewski* 1934 in having genital pore form hind end of the ventral sucker to a little sucker to the ventral.

**Keywords:** Rita rita, Ganga river, *Nicolla sinhaei*, *Nicolla fotedari*.

### Introduction

During the study of trematode parasite of fish, sixty specimens of this fish i.e. Rita rita have been collected at the different sites of river Ganga and these specimen were examined for trematode parasite. Infection was found in the ratio of 15:1. As Over street (1969) reported digenetic trematodes of marine teleost fishes.

Rebeeq *etal*(1959) reported some new trematode of this genus. The new species was observed and studied in fresh water fish and is found little dissimilarities from the other digenetic trematodes.

Slusarski (1958) reported adult digenea from salmonidae&. Yamajuti (1971) prepared the synopsis of digenetic trematodes of Vertebrates. In our studythe *Nicolla sinhaei* has been observed and studied both morphologically as well as anatomically in the laboratory. The new species appear to the differ from other known trematodes.

### Material and Methods

Collected fish samples individually identified as Rita rita, then Trematode species are examined in fishes after identification, the trematodes were fixed in 70% alcohol under slight pressure of the cover glass for 24 hours. After fixation the parasite were again kept in 70 % of alcohol, stained in acetic alum carmine, differentiated in acid alcohol, dehydrated in graded series alcohol, cleared in clove oil and mounted in Canada Balsam.

### Result

The identified parasite from the intestine of Rita rita have small body with aspinose, narrow anterior end and rounded posterior end, gradually increasing in magnitude posteriorly, 1.45 x

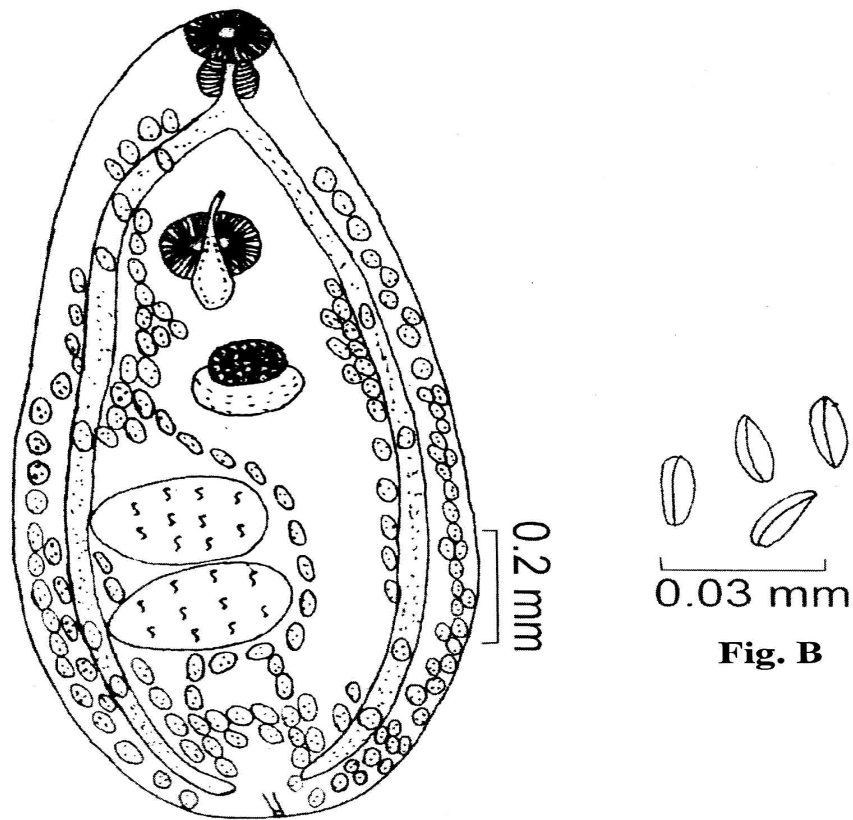
0.65 mm in size. Oral sucker terminal, subspherical or subrounded, 0.11 x 0.14 mm in size prepharynx indistinct. Pharynx globular muscular, 0.06 x 0.09 mm in size. Oesophagus short tubular, 0.04 x 0.02 mm in size. Intestinal caeca extending up to nearly hind end of the body. Ventral sucker larger than oral sucker, submedian, preovarian, 0.14 x 0.16 mm in size. Excretory pore terminal and tubular, excretory bladder present. Genital pore submedian present at the dorsal side of ventral sucker at 0.28 mm from anterior extremity.

Testes oval or subspherical, subequal just close to right branch of intestinal caeca. Anterior testis, 0.18 x 0.27 mm in size at 0.85 mm from anterior extremity. Posterior testis slightly larger than anterior testis, 0.18 x 30 mm in size. Cirrus sac elongated sac like, extending from genital pore to little posterior of ventral sucker, 0.06 mm maximum width at base and 0.23 mm long vesicular seminalis, 0.14 x 0.04 mm in size. The parsprostatica surrounded by numerous prostate gland cells, 0.08 x 0.03 mm in size.

Ovary subrounded in shape, overlapping receptacular seminalis pretesticular and postacetabular in position, 0.09 x 0.12 mm in size at 0.58 mm from anterior extremity. Vitellaria follicular extending from the level of intestinal bifurcation up to the end of intestinal caeca at posterior extremity and confluent in post testicular region. Uterus arises from ootype, runs anteriorly and open at genital pore. Eggs ovoid, operculated, 0.025-0.035 x 0.016-0.022 mm in size.

## Discussion

The new form is referred to the genus *Nicolla Wisniewski*, 1934 with *N. Skrjabini* as its genotype. So far other 9 species are known viz. *N. India* Srivastava (1968), *N. allahabadensis* Srivastava (1968), *N. gallica* Dallfus (1959), *N. halichoeri* Overstreet (1969), *N. festiobiliqua* Wisniewski (1933), *N. Wisniewski* Slusarki, (1958), *N. timoni* Rebeeq et Giudicelli (1959), *N. macrostomum* Wisniewski, (1934), and *N. fotedari* Agarwal and Sharma, (1990). The new species has sucker larger than oral sucker in having vitellaria follicular extension up to the hind end of the body and in having similar shape and size of pharynx and oesophagus. Besides these similarities the present form differs to all these known species of the genus in having non overlapping testes, in having the receptacular seminalis close to ovary and in relative shape and size of the various organs of the body.



**Fig. A**

**Plate I, Figs A-B. *Nicolla sinhaei* sp. Nov.**

**Fig. A Entire worm Fig. B Eggs Enlarged**

Accordingly it is referred as a new species with specific name *Nicolla sinhaei* (n. sp.)

The new species is named in honour of **Dr. Vinay Sinha** (Reader) Department of Zoology, D.A.V. College, Kanpur.

HOST : Rita rita (Ham.)

PARASITE LOCATION : intestine

LOCALITY : River Ganga in district Kanpur (U.P.)

## References

1. DOLLFUS, R.P. 1959-60 Recherches is experiment ales Sur *Nicolla gallica* (Dollfus, 1940) Dollfus, 1958 sa cereaire cotylacergue et sa metacercaria progenetique observations sur Coitocaecinae Poche (1926) trematode Podocotyloidea at surles cercaries cotylocerques d equ douce etc marines ann. Par. 34 595-622.
2. OVER STREET: RM 1969 Digenetic trematodes of marine teleost fishes from Biscayne bay Floride. Tulane St. Zool 118-176.

3. REBECQ, J. & GIUDICELLI, J 1959. Sur un trematode nouveau de salmo fario appartenant au genre Nicolla, wisnewski, 1933. Bull sac Zool France 83 : 395-400
4. SLUSARSKI: W. 1958 The adult digenea from salmonidae of the basin of the vistula and the south Baltic, Acta Par Pol. 6: 249-528.
5. SRIVASTAVA: C.B. 1968 on the three new trematode from fresh water eels. Zool. Anz 321-328.
6. WISNIEWSKI: L.W. 1933 Remarques surla systematiqueda de la famille de coetocaecidae Nicolla n.eg.; Ozakia n.j. Coitocaecum proxitum n. sp. Acad. pol. sc. et. Letl compt. Rend Mens cp Sc. Math et. Nat Cracovie 5-B : 27-41
7. YAMAGUTI: 1971 Synopsis of digenetic trematode of vertebrates Vol. I Keigaku Publishing Co. Tokyo Japan 1074 pp.
8. SWARUP, M. & JAIN, S. 2003. Digenetic trematodes of fresh water fishes with the discussion on their systematic position. Res. J. Anim. Sci., 18, 43-54.
9. SWARUP, M. & JAIN, S.P. 2004. Redescription of certain trematode parasite of fresh water fishes with remarks on their validity. Nat. J. Para., 18, 31-41.
10. SMITH A.D. 2004. Parasit, 94: 98-105.
11. SMITH A.D. 2005. Jour Parasit, 91: 303-313.