

A NEW MONOGENEA PARAMAZOCRAES NAWABGANJENSIS N.SP. FROM FRESH WATER FISH EUTEROPICHTHYES VACHA

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ABSTRACT—The fresh water fish *Euteropichthyes vacha* was collected from local market of Nawabganj of District Gonda (U.P.) for monogrean ectoparasites. Out of 11 specimens of fresh water fish *Euteropichthyes vacha* were examined and only one specimen was found infected with three specimen of said species. The present form differs from all the known species except *P. gorakhnathi* in having different shape of oral suckers. However, it differs from *P. gorakhnathi* in having different organization of clamps skeleton in having more than an ovary and difference in disposition of small genital hooks. The present form differs from *P. guptai* n. sp. in having difference in shape and organization of genital hooks, having single ovary, large number of testes and different organization of clamp skeleton. Besides this it also differs from *P. guptai* in having difference in shape of anchors. The present form is therefore, regarded as a new species and named as *P. nawabganjensis* n. sp.

Key Words: *New monogenea Paramazocraes nawabganjensis, Eutropichthyes vacha, Nawabganj, Gonda (U.P.).*

I INTRODUCTION

Monogeneans are mainly ectoparasites of fishes, occasionally they are found endoparasitic (**Gussev** and **Fernando**, 1973). Among parasites infecting fishes, the monogenean constitute a group, which play an important role as pathogens of severe disease. This is because they affect those organs and tissues which are vital to the normal functioning such as gill and skin, the organs of respiration. In majority of cases, monogeneans cause dual type of injury to their hosts. Through their hooks and other organs of attachment, they break the continuity at the site of attachment and result is to localize hemorrhage. At the time they feed upon the blood and cells of reputed tissue (**Bychowsky**, 1957 and **Uspenskaya**, 1962). Researches have established that the volume of the

blood sucked from the fish quire appreciable and this leads to certain conditions like anemia, mortality etc.

II MATERIAL AND METHODS

The monogeneans were collected by Mizelle's freezing techniques. They were kept in refrigerator from 8 to 48 hours. The low temperature not only relaxes the worm but also help in automatic removal of mucous in which there flukes were entangled. Subsequently, the gills were removed, placed in separate, tubes, half filled with water and shaken vigorously. This solution now poured in clean petridish diluted with water and examined under binocular microscope. The worms thus collected were washed and fixed in hot 70% ethyl alcohol or 10% neutral formalin.

Study of chitinoïd hard parts were made in either temporary glycerin, or in dehydrating through ascending grades of alcohol, clearing sketches were made from permanent preparations. All measurements were taken with the help of stage micrometer and an oculometer.

III GENERIC DIAGNOSIS

Body elongate tapers towards both ends. Haptor with four pairs of unequal, pedunculate clamps and a long, digitiform terminal lappet bearing three pairs of anchors. Clamps mazocraeid in structure, with perforated middle piece. Oesophagus long, bifurcating posterior to vagina, caeca terminating separately in haptor. Testes not numerous, post-ovarian, intercaecal. Vas deferens long and straight, wider distally. Genital atrium muscular with 5 pairs of hooks of three different types, a lateral pair

consisting of long, sickle-shaped hooks, each born on muscular pad, other four inner hooks in two separate groups, of which the anterior two set on a separate pad lie between two lateral hooks, and the remaining two palmate at distal end, are set on a semicircular pad, two on each side behind the anterior inner ones in the type species. Vitellaria extending from behind vagina to caecal end.

IV DESCRIPTION

The body is elongated, tapering both anteriorly and posteriorly, measuring 2.51-2.81 * 0.25-0.26 mm. The head is provided with a pair of rounded, muscular buccal suckers, each measuring 0.049-0.050 mm. The pharynx is oval, muscular and measures 0.139-0.141* 0.080-0.082 mm. The oesophagus and intestine is not visible in the specimens as this region is occupied by vitelline follicles.

The tests are post-equatorial, post-ovarian and 5-6 in number. They are rounded to oval and their diameter ranges from 0.036-0.38 mm. The genital atrium is rounded, muscular and localized pre-equatorially, slightly above the receptaculum seminis. Receptaculum seminis is tri-lobed, irregularly shaped and measures 0.081-0.085* 0.041-0.045 mm. The size of the atrium ranges from 0.022-0.023 mm. In the genital atrium, there exist five pairs of spines. Two of which are large with broad base, pointed and curved tip. The size of curved hooks ranges from 0.007 - 0.008 mm. The four pairs of smaller hooks are also with base arranged in a line in the cup-shaped depression.

A. Clamps:

Diameter of proximal clamp	: 0.12-0.122* 0.053-0.054 mm
Diameter of distal clamp	: 0.052-0.053* 0.050-0.051mm
SAA length	: 0.091-0.092 mm
SMS length	: 0.033-0.034 mm
SMS width	: 0.042-0.043 mm
SPS length	: 0.038-0.039 mm
SPS width	: 0.031-0.032 mm
SAP length	: 0.10-0.11 mm
SMB length	: 0.011-0.012 mm
SMB width	: 0.067-0.068 mm

The ovary is pre-equatorial, pre-testicular and three to four in number. They are oval and measures 0.025-0.043* 0.015-0.030 mm. The vitelline follicles are well developed, scattered from behind the genital atrium up to haptor.

The haptor is distinctly set off from the body. It measures 0.48-0.50* 0.58-0.60 mm including lappet. It comprises four pairs of clamps and an armed lappet. The clamps skeleton consists of 6 sclerites:

1. Scleritum arcuatum anterius (SAA) is elongated, bracket shaped and two in number.
2. Scleritum medio-supple mentarium (SMS) is rectangular plate like.
3. Scleritum postero-supple mentarium (SPS) is triangular plate like structure having a wide central perforation.
4. Scleritum arcuatum posterius (SAP) is thin elongated, arched with club-shaped ends and swollen in middle.
5. Scleritum medio-basalis (SMB) is wide broad plate.
6. Scleritum postero-lateralis (SPL) is thin elongated and pointed.

The lappet is armed with two pairs of anchors and pair of hook. The outer pair of anchor is merus type with pointed and curved tips and roots with bifid base diverging at right angle to the shaft. The anchors are dactylogyrus type, sickle-shaped with root. The hooks are also straight, dactylogyrus type. The detail of measurements are-

SPL length : 0.121-0.122 mm

B. Lappet:

Length of Lappet : 0.092-0.10 mm
Width of Lappet : 0.132-0.135 mm

C. Outer Anchor:

Total length of anchor : 0.064-0.065 mm
Length of anchor shaft : 0.060-0.061 mm
Length of anchor point : 0.004-0.005 mm

D. Inner Anchor:

Total length of anchor : 0.025-0.026 mm
Length of anchor shaft : 0.027-0.028 mm
Length of anchor point : 0.003-0.004 mm

E. Hook:

Length of Hook : 0.011-0.012 mm

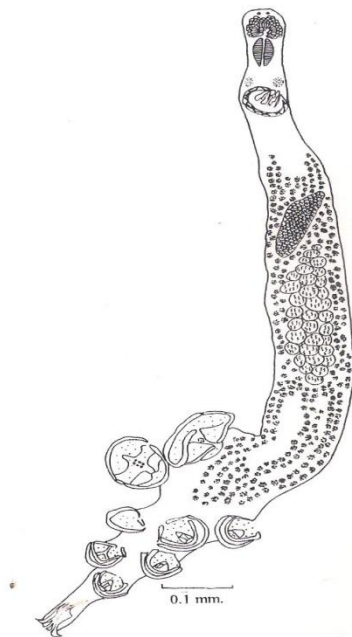
V DISCUSSION

The present form belongs to the genus *Paramazocraes* **Tripathi, 1959**. To the best of my knowledge the known species of the genus are *P. thrissocles* **Tripathi 1959**; *P. phasae*, **Tripathi 1959**; *P. kozikodiensis* **Gupta and Khullar, 1967**; *P. indica*, **Gupta and Krishna, 1975**; *P. pricei*, **Gupta and Krishna, 1979**; *P. gorakhnathai*, **Agrawal and Singh, 1985**; *P. vinodae*, **Gupta and Masoodi, 1985** and *P. kasiensis*, **Agrawal and Kumar, 1990**.

The present form differs from all the known species except *P. gorakhnathi* in having different shape of oral suckers, and having different

organization of clamps skeleton and in having more than one ovary and difference in disposition of small genital hooks (in case of *P. gorakhnathi* it is arranged in the form of ring, however, in present form, it is arranged in linear fashion).

More over, it differs from *P. guptai* n. sp. in having differences in organization of oral sucker, presence of pharyngeal glands, differences in shape and organization of genital hooks, having single ovary, large number of testes and different organization of clamp skeleton, Besides this, it also differ from *P. guptai* in having difference in shape of anchors. The present form is therefore, regarded as a new species and named as *P. nawabganjensis* n. sp.



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