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On a new species of Monogenea *Diplozoon chauhani* n.sp. (Diplozooidae) from Indian fresh water food fish *Cirrhinus mrigala*

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Abstract
The fresh water fish *Cirrhinus mrigala* (Ham) was collected from the fish market of district Basti (U.P.), and examined 25 specimens, of which only two specimens were found infected with nine specimens of said species. The site of infection being the gill filaments of the host. The present form differs from all these known species of the genus except *D. dayali* in having larger clamps in absence of cephalic glands and in disposition of gonads. However, it differs from *D. dayali* in extension of intestinal caecum in haptor, in having larger clamps and having Y-shaped central rod. The present form therefore, describle as new species and named *D. Chauhani* n.sp. after Dr. B.S. chauhan of his valuable contribution.

Keywords: New monogenea Diplozoon chauhani, *Cirrhinus mrigala.*

1. Introduction
Monogeneans are mainly ectoparasites of fishes, occassionally they are found endoparasitic [6]. Among parasites infecting fishes, the monogeneans 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 the majority of cases, monogeneans cause dual type of injury to their hosts. Through their hooks and other organs of attachment and result is to catalyze haemorrhage. At the time they feed upon the blood and cells of ruptured tissue [2, 13]. 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 [4, 9].

2. 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 to a 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 chitinoid 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.

3. General Diagnosis
Diplozooidae with rectangular opisthohaptor bearing 4 pairs of clamps and a pair of inconspicuous posterior anchors.

4. Description
The body is leaf like dorso-ventrally flattened, measuring 3.18-3.56 * 0.57-0.71 mm in size. Two individuals fused together to form 'X' shaped with longer fore-body. The fore-body measures 2.11-2.30 mm and hind-body measures 1.08-1.30 mm in length.

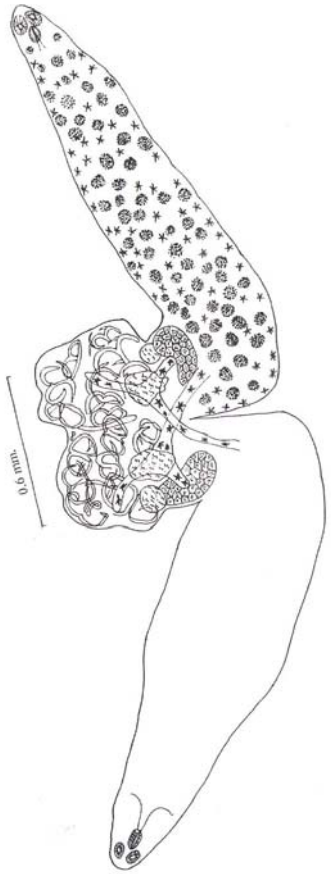

Fig 1.0: *Diplozoon chauhani* n.sp.

The head of each individual bears a pair of round to oval, muscular, sucker, and each measuring 0.55-0.61 mm in diameter. The pharynx is oval, muscular, elongated and measures 0.06-0.07 * 0.03-0.04 mm. The oesophagus is short. The intestinal caecum gives off many lateral diverticulae on either lateral side and extend in to the hind body up to 3rd clamp in the form of a blind sac. The entire intestinal cacum is filled with pigment granules.

The testis is single, pear-shaped, and post-ovarian in hind part of the body measuring 0.091-0.17 * 0.12-0.13 mm. A rounded seminal vesicle is present between ovary and testes measuring 0.10-0.11 mm in diameter. The ovary is pre-testicular, elongated and measures 0.15-0.16 * 0.21-0.22 mm. The vitelline follicles are rounded, oval and extended from behind the intestinal bifurcation and extend throughout the fore-body.

The haptor lobed, set off from the body proper and measures 0.52-0.54* 0.40-0.44 mm. The armature of haptor consists of 4 pairs of clamps, four on the either side. Each clamp is with 7 chitinous rods. The central one is Y-shaped hollow. Two sickle shaped rods mark the outer boundary of these rods. From the proximal part of outer-paired rods, a straight rod arises pointing towards the central rod. The clamp size decreases from anterior to posterior and is devoid of anchor. The details of measurements of haptor are.

Clamp I **:** 0.13 - 0.15 * 0.12 - 0.13 mm
Clamp II **:** 0.17 - 0.18 * 0.13 - 0.14 mm
Clamp III **:** 0.17 - 0.20 * 0.16 - 0.17 mm
Clamp IV **:** 0.21 - 0.22 * 0.24 - 0.25 mm
Central rod **:** 0.05 - 0.07 mm
Outer lateral rod **:** 0.10 - 0.11 mm
Inner lateral rod **:** 0.13 - 0.15 mm
Small projecting rod: 0.032 - 0.040 mm

5. Result and Discussion

The genus *Diplozoon* was erected by **Nordmann, 1832.** As many as 46 species of the genus are reported from different part of the world. Out of which nine species are reported from India. These are *D. indicum* **Dayal, 1941** from *Puntus sarana*; *P. kashmirensis* Kaw, 1950 from *Schizothorax* sp.; *D. soni*, **Tripathi, 1959** from *Oxygaster bacaila*; *D. cowveryi* **Tripathi, 1959** from *Cirrhinus cirrhosus*; *D. microclamps* **Kulkarni, 1971** from *Puntius sarana; D. dayali* **Pandey, 1975** from *Catla catla*; *D. lucknowensis* **Gupta and Sharma, 1978** from *Labeo calbasu*; *D. dasshwamedhai* **Agarwal and Kumar 1989** from *Barilius bola*.

The present form differs from all these known species of the genus except *D. dayali* in having larger clamps in absence of cephalic glands and in disposition of gonads. However, it differs from *D. dayali* in extension of intestinal caecum in haptor, in having larger clamps and having Y-shaped central rod. The present form is therefore, described as new species and named *D. chauhani* n.sp. after **Dr. B.S. Chauhan** for his valuable contribution.

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