

Bicotylophora blochii n. sp (Monogenea: Discocotylidae) from the Gills of *Trachinotus blochii* of Karachi Coast, Pakistan

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Abstract: A new monogenea *Bicotylophora blochii* is described here from the gills of the fish *Trachinotus blochii* of Karachi coast. The species is characterized by having elongated flattened body, two oval shape sucker, pharynx rounded, esophagus tube like, large postvarian testes. Ovary elongated. Genital atrium rounded, vagina cup shaped. Haptor in two narrow lobes. 61- 65 clamps in each lobes.

Keywords: Monogenea, *Bicotylophora blochii* n. sp., fish, gills, Karachi coast.

1. Introduction

Monogenea are diverse group, and several thousand species have been describe (Poulin, 2002) Monogenea are one of the important fish pathogen and investigation on various aspects of these parasites are also important field of study and research.

The family Discocotylidae has six sub-families. The genus *Bicotylophora* (Price 1936) of sub-famiy Bicotylophoranae (Yamaguti 1963) has been reported in different parts of world, but the present study is the first record of genus *Bicotylophora* reported from Karachi coast, Pakistan.

2. Materials and Method

200 specimens of *Trachinotus blochii* were collected from West Wharf Karachi coast. Gills were removed and placed in beaker containing formalin and water solution (water = 1000 ml, formalin= 2.5 ml) for 7-8 hours and were transferred into Petri dish containing the same solution. The liquid from the beaker was left till the solid parts settled down. The supernatant was poured out and remaining part was examined under binocular microscope and monogenea were recovered. Specimens were fixed in AFA (A mixture of 70% ethyl alcohol, formalin and acetic acid in the ratio of 90:7:3) for 24 hours. The gills were also examined, monogenea were collected and processed as mentioned above. After 24 hours these specimens were washed several times with 70% alcohol, stained with Mayer's Carmalum, dehydrated in graded series of alcohols, cleared in clove oil and xylene and mounted permanently in Canada balsam.

Illustrations were made with the aid of a camera Lucida. All measurements are given length by width in millimeters. Photographs of holotype specimens were also prepared.

Specimens for scanning electron microscopy were fixed in AFA solution for 24 hours. After 24 hours the specimens were thoroughly washed several time with 70 percent alcohol to remove all traces of fixing agent, the specimens, after critical drying mounted on stubs, coated with gold and photographs were taken with the help of SEM. Joel Japan JSM 6380A at accelerating voltage of 15KV at Karachi

University, Central Laboratory. The SEM measurements are in micrometer. Holotype and Paratypes are in the collection of the first author.

Bicotylophora blochii n.sp.
(Fig. 1-2)

3. Results

Family: Discocotylidae Price,1936.

Sub family: Biocotylophorinae Yamaguti, 1963

Genus: *Bicotylophora* Price,1936

Host: *Trachinotus blochii* Lecepede,1801

Location: Gills

Locality: West Wharf, Karachi coast

No of specimens: 12 in 10 fishes 200 fishes examined.

Holotype: Z-JUW- M 6

Body is elongated, flattened, with smooth tegument, 5.35-5.38 mm long, 0.75-0.77 wide. Body is divided into anterior narrow region, wider middle region and posterior region narrow towards haptor. Two oral suckers are present, muscular, oval in shape, 0.11-0.12 long ,0.07-0.72 wide. Mouth is terminal. Eye spots are absent. Pharynx is rounded, 0.04-0.06 long,0.03-0.04 wide. Esophagus is long, tube like, 0.18-0.19 long, bifurcate posterior to genital atrium. Intestinal crura extending along the vitellaria, teminating near haptor. Testes are postvarian in posterior region, numerous, irregularly arranged, large testes are 0.07-0.075 long, 0.05-0.054 wide, small testes are 0.03-0.032 long,0.03-0.031 wide. Genital atrium is armed,0.08-0.083 long, 0.06-0.06 wide. Ovary is present anterior to testes, elongated, 0.45-0.47 long,0.05-0.051 wide. Vagina is cup-shaped, 0.1-0.13 long,0.09-0.091 wide. Uterus is elongated, 0.65-0.68 long,0.07-0.072 wide. Vitellaria consist of numerous small follicles, present in the lateral fields of body ,anterior part is devoid of vitellaria. Haptor consist of two narrow lobes each bearing numerous clamps, arranged irregularly, 61-65 clamps on each lobes. Anchor absent. Clamps consist of (a) marginal sclerites (b) 4 connecting sclerites and (c) median sclerites.

Etymology: The name *Bicotylophora blochii* is refers to the fish host.

Discussion

The *Bicotylophora blochii* n.sp. from the fish *Trachinotus blochii* included in the genus *Bicotylophora*. The genus *Bicotylophora* was first erected by Price, 1936 to accommodate an undescribed monogenetic trematode from the gills of *Trachinotus carolinensis* in Florida. The species *Bicotylophora trachinoti* (MacCallum, 1921) Price, 1936 (syn. *Dactylocotyle t.M.*), also recorded on *Trachinotus carolinensis* and *Roccus lincatus* (?) in N. Aquarium, Florida (Sproston, 1946); Bravo-Hollis, 1984 on *T. carolinus* in Veracruz, Quintana Roo, Mexico and on *T. falcatus* in Quintana Roo, Mexico; Bravo-Hollis 1986 on *T. kennedyi* and *T. rhodopus* in Sinaloa and Nayarit, Mexico; *Bicotylophora beri* Euzet and Wahl, 1977 on *T. falcatus* in Ivory coast. In all essential features the present species are similar to genus *Bicotylophora* but cannot be included in the species *B. trachinoti* because of differences in important diagnostic

features, such as body size, shape of egg, number and structure of clamps.

The present species is longer, (5.35-5.38 x 0.75-0.77) than *B. trachinoti* (4 x 0.52). In present species egg is elliptical in shape while in *B. trachinoti* egg is with long polar filament. The haptor consist of two narrow lobes each bearing numerous (61-65) clamps, arranged irregularly while in *B. trachinoti* the lobes of haptor bear a row of four sessile clamps. In present species clamps have four connecting sclerites, while in *B. trachinoti* no connecting sclerites are present in clamps. In present species the combination of characters such as, tube like esophagus, elliptical shape uterus and egg, 61-65 number of clamps and 4 connecting sclerites in clamps, separates the present species from other species of the genus. Therefore, the present species are regarded as new and name *Bicotylophore blochii* is proposed for new species.

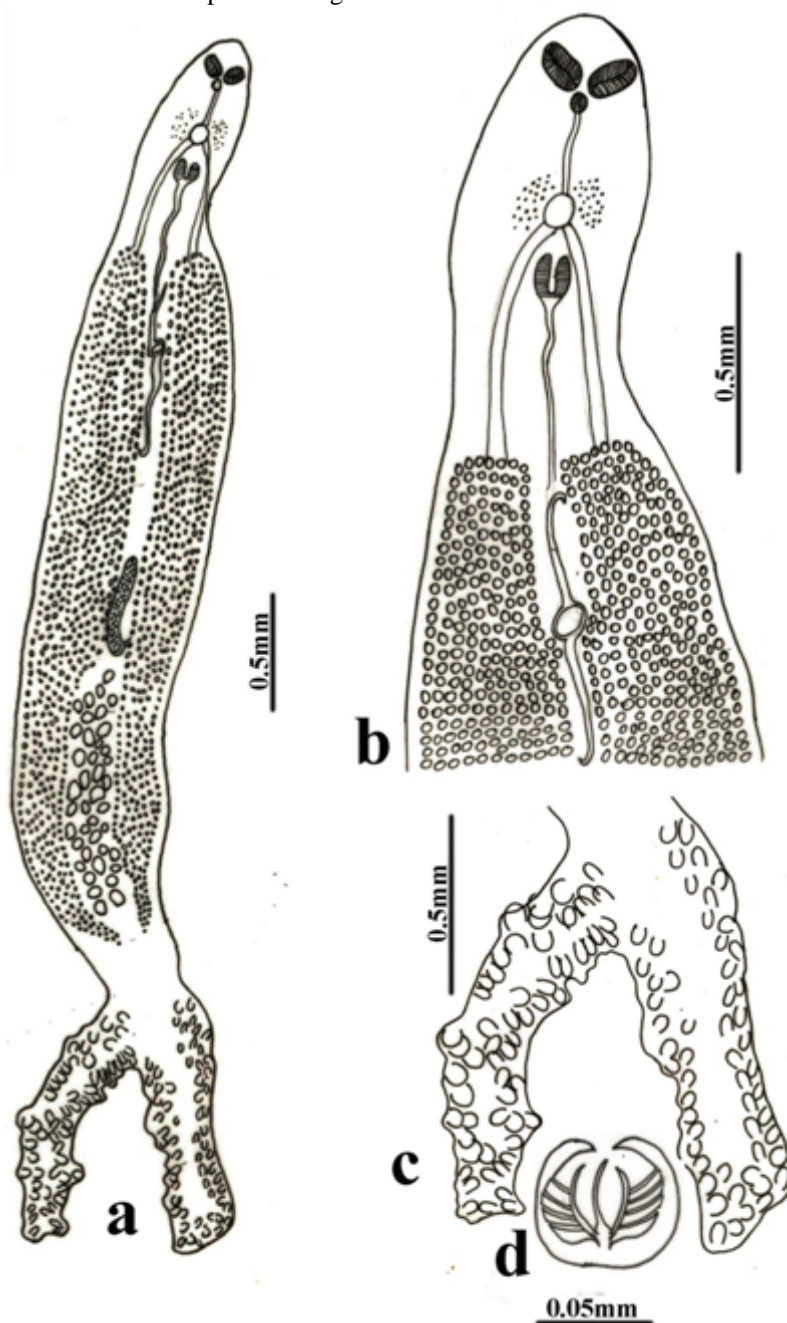


Figure 1 (a-d): *Bicotylophora blochii* n. sp. **a.** Whole mount of holotype, (ventral, view) **b.** Anterior portion showing genital atrium, vagina and uterus. **c.** Bifurcated haptor. **d.** Clamp

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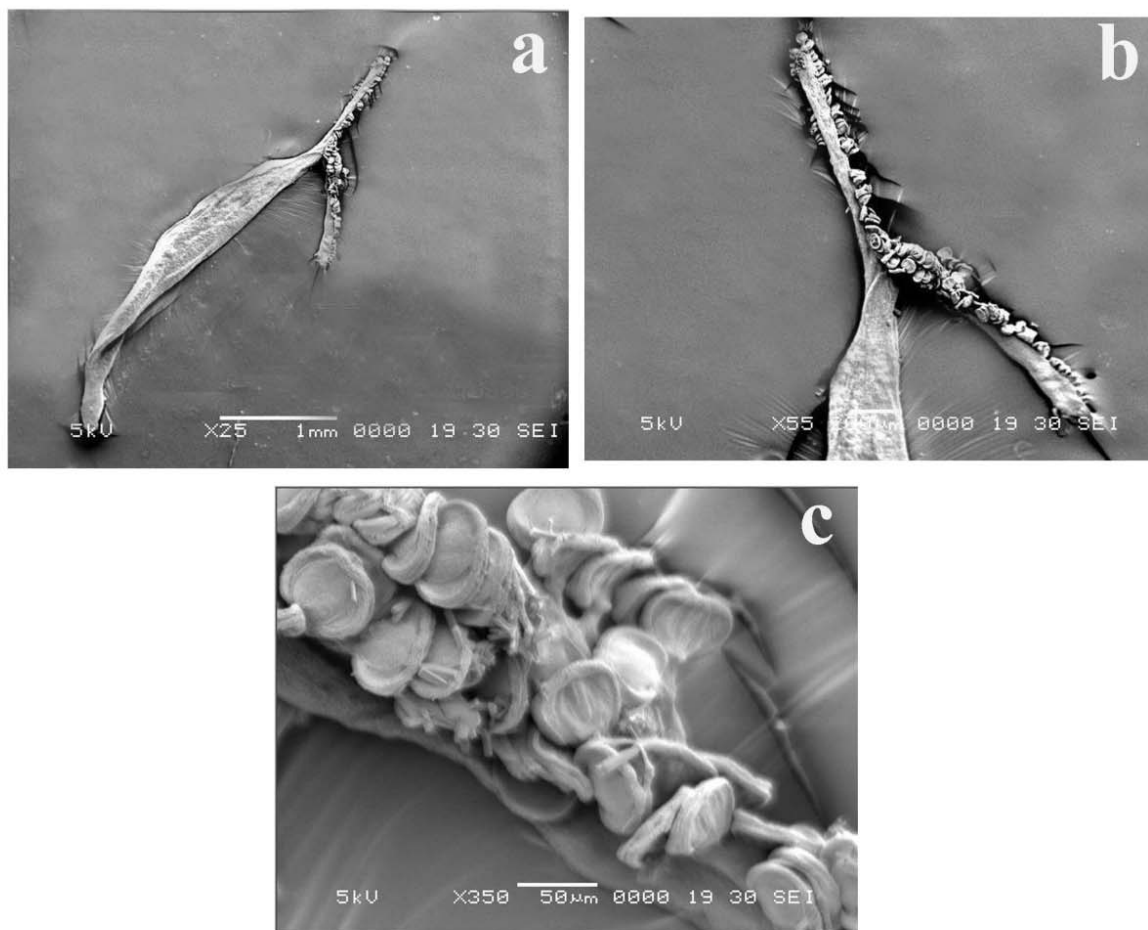


Figure 2 (a-d): *Bicotylophora blochii* n.sp. SEM micrograph of paratype. **a.** Entire specimen **b.** Bifurcated haptor **c.** Clamps

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