

**PLEORCHIS KARACHIENSIS N.SP. (TREMATODA: PLEORCHIDAE, POCHE, 1926)
FROM THE FISH SCIAENA DUSSUMEIRI OF KARACHI COAST**

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ABSTRACT

A new trematode of family Pleorchidae, Poche, 1926 *Pleorchis karachiensis* n.sp. is described here from the intestine of the fish *Sciaena dussumeiri* of Karachi coast. This species is characterized by having elongate body almost uniformly thick throughout its length with a rounded caudal appendage, oral sucker is terminal projecting out, rounded, prepharynx and esophagus prominent, pharynx transversely elongate, ceca long terminating anterior to caudal appendage, anterior cecal diverticula are absent, acetabulum small, spherical and a little behind cecal bifurcation, genital pore preacetabular, testes 50-52 in number, intercecal situated on each side of excretory bladder in two ventral and two dorsal longitudinal rows, cirrus sac claviform, extending laterally on right side of acetabulum and reaching in postacetabular region containing elongate seminal vesicle and pars prostatica. Ovary is median, 8 to 9 lobed, pretesticular, vitellaria consist of numerous small follicles extending from anterior level, post bifurcal to posterior end of the body proper but not reaching the caudal appendage, uterus coiled, between ovary and acetabulum, eggs numerous, elongate, metraterm prominent. Excretory vesicle tubular, excretory pore terminal.

Keywords: *Pleorchis karachiensis* n.sp., intestine, fish (*Sciaena dussumeiri*), Karachi coast, Pakistan.

INTRODUCTION

Species of genus *Pleorchis* Railliet, 1896 are known from Woods Hole, USA (Lühe, 1906; Arai, 1963; Amato, 1983; Manter & Van Cleave, 1951); Hawaii (Yamaguti, 1970); France (Bartoli *et al.*, 2004); Ghana (Fischthal & Thomas, 1968); India (Parukin, 1974; Saxena *et al.*, 2010, Gupta & Gupta, 1976; Gupta & Ahmad, 1976; Gupta & Puri, 1979); Arabian Gulf of Kuwait (Al-Yamani & Nahas, 1981) and China (Shen, 1983). The species described by Fischthal and Thomas, *P. ghanensis* has also been reported from Karachi coast, Pakistan (Bilqees, 1977, 1981; Shaukat & Bilqees, 2005). Recently one species *P. heterorchis* Shaukat and Bilqees, 2006 has also been described from fishes of Karachi coast.

At present 16 valid species are known in the genus *Pleorchis*. Present is the 17th species and third from Pakistan. Number of testes and extent of vitelline follicles are important diagnostic feature to distinguish different species (Madhavi & Narasimhulu, 1985; Bartoli *et al.*, 2004) with variations in other morphological characteristics. During the present studies a new species *Pleorchis karachiensis* is identified and reported here from the fish *Sciaena dussumeiri*.

MATERIALS AND METHODS

During a routine survey of trematodes of fishes of Karachi coast, 69 fishes *Sciaena dussumeiri* were examined. With several other parasites 5 trematodes were recovered from the intestine of one fish. These were fixed in AFA solution (70% ethyl alcohol + formalin + acetic acid in the ratio 92:5:3); under slight coverglass pressure, stained with Mayer's carmalum, dehydrated and cleared by usual methods and mounted permanently in Canada balsam. Photograph was taken with Nikon (Optiphot-2) photomicroscope using Fuji colour film. Drawings are made with a camera Lucida and measurements are given length by width in millimeters. Holotype and paratype specimens were deposited in the Department of Zoology, Jinnah University for Women, Karachi, Pakistan.

DESCRIPTION

***Pleorchis karachiensis* n.sp.**

(Figs. 1-2)

Host: *Sciaena dussumeiri* Linn.

Location: Intestine

Locality: Karachi coast, Pakistan

No. of specimens: 5 from a single fish, 69 examined

Holotype No.: BMC-T161

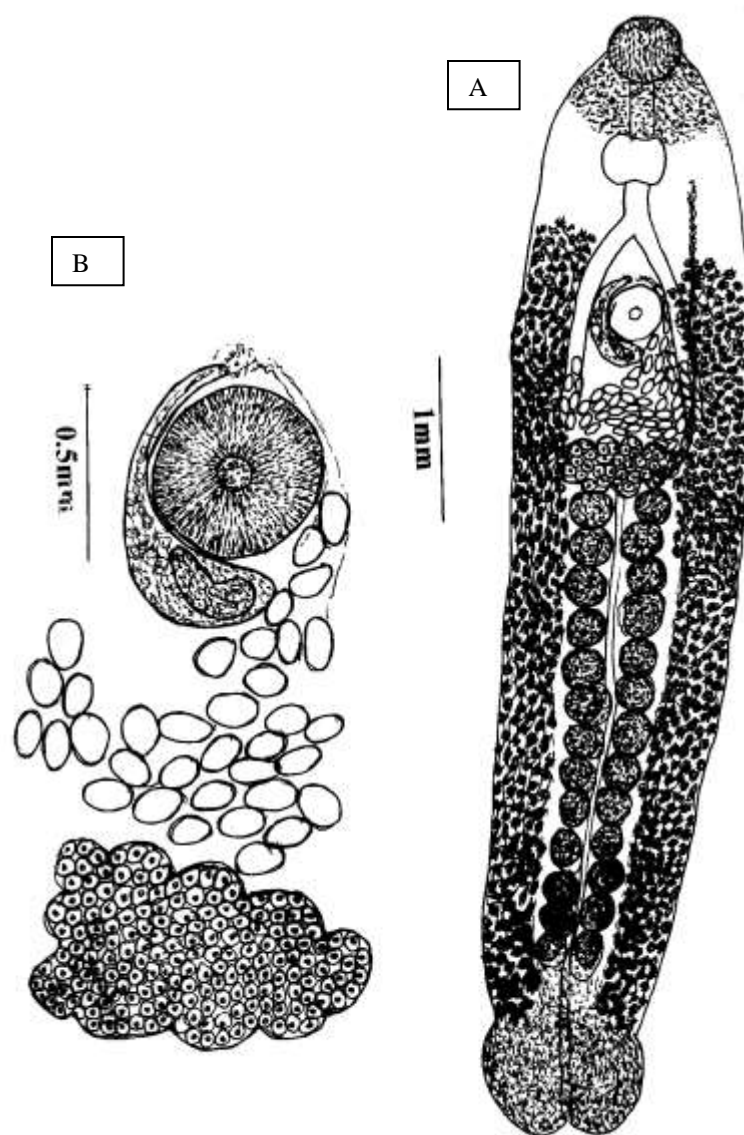


Fig.1. *Pleorchis karachiensis* n. sp. A) Holotype specimen, entire
B) Cirrus sac and associated structures.



Fig.2. Photograph of Holotype specimen.

Diagnosis: Body smooth, elongate, almost uniformly thick throughout its length with a flattened rounded caudal appendage, notched at terminal end, slightly narrow anterior to caudal appendage. Body 7.3 – 7.8 long, 1.3 – 1.5 wide including caudal appendage which is 0.62 – 0.64 by 1.0 – 1.2, greatest width at the ovarian region. Oral sucker terminal, projecting out, almost rounded, muscular, 0.29 – 0.31 by 0.40 – 0.41 in size, posteriorly surrounded by numerous granular cells. Prepharynx tubular 0.31 – 0.36 in length. Pharynx transversely elongate, 0.21 – 0.23 by 0.39 – 0.41 in size, slightly concave anteriorly and posteriorly, esophagus 0.21 – 0.25 long, bifurcating some distance anterior to acetabulum. Ceca long, smooth, anterolaterally directed diverticles are absent, ceca are also not diverculated laterally, ending blindly on each side of excretory vesicle at posterior end not extending in caudal appendage. Acetabulum rounded, small, 0.31 – 0.36 in diameter.

Testes rounded to slightly irregular in four rows including two dorsal and two ventral longitudinal rows in intercecal field, 0.19 – 0.25 in diameter. 50 in type 13 pairs on left and 12 on the right and 50-52 in other specimens occupy most part of the hindbody, posterior to ovary. Cirrus pouch claviform, membranous, 0.70 – 0.73 by 0.11 – 0.19 in size extending from genital pore around right margin of acetabulum close to postacetabular region containing

elongate seminal vesicle, pors prostatica and small cirrus. Seminal vesicle measuring 0.19 – 0.23 by 0.05 – 0.053. Genital pore immediately preacetabular.

Ovary pretesticular, median, divided into 8-9 lobes, 0.31 – 0.36 by 0.39 – 0.42 in size, between cirrus pouch and close to anterior testis. Laurer's canal not prominent, seminal receptacle is absent. Vitelline follicles numerous, small, densely massed in lateral fields, extending from level of preacetabular region to posterior end but not entering into caudal appendage. Uterus winding anterior to ovary, turning forward ascending along left side of acetabulum, metraterm poorly developed opposite the male terminal duct across the acetabulum. Eggs, oval thin-shelled, 0.09 – 0.13 by 0.005 – 0.008.

DISCUSSION

There are 16 valid species of the genus *Pleorchis* Railliet, 1896. These are separated from each other mainly on the basis of number of testes and extent of vitellaria. These species can be divided into two groups, one having testes less than 48. Most of the species fall in this category. Other with more than 48 testes in which there are only four species including *P. americanus* Lühe, 1906 with a total of 60 but 54-56 testes have been reported by Amato (1983). Other species *P. californiensis* Manter and Van Cleave, 1951 was described with a large number of testes (92-108). Third species *P. uku* Yamaguti, 1970 has 50-54 testes. The fourth one *P. mamaevi* Parukin, 1974 has 56 testes. The present specimens can be included in this group as these have 50-52 testes. In this respect the present new species *P. karachiensis* comes close to *P. uku* Yamaguti, 1970 described from Hawaii in *Apricon virescens* which has 50-54 testes. But the present species is different in having a caudal appendage, absence of numerous outer diverticles as reported in *P. uku*, and in the extent of vitelline follicles which are restricted between preacetabular to caudal appendage, while the vitellaria in *P. uku* extend between esophagus or intestinal bifurcation to extreme posterior end of body. The excretory vesicle in the present species is Y-shaped but it is I-shaped in *P. uku*. Present species also lacks anterolateral diverticles as in *P. puriensis*, but this species has vitellaria interrupted at the ovarian level and reaches as far as posterior margin of pharynx which is up to acetabular level in the present species, which is not interrupted in the present species.

Other species mostly have 44 testes including *P. polyorchis* (Stossich, 1889); *P. magnaporus* Arai, 1963; *P. ghanensis* Fischthal and Thomas, 1968; *P. puriensis* Gupta and Ahmad, 1976; *P. indicus* Gupta and Puri, 1979; *P. arabicus* Al-Yamani and Nahas, 1981; *P. hainanensis* Shen, 1983; while *P. sciaenae* Yamaguti, 1938 is with 44-48 testes; *P. psettodesai* Gupta and Gupta, 1976 has 40-44 testes; *P. srivastavai* Saxena *et al.*, 2010, 48 testes and *P. nibeae* Shen, 1983 is with 29-40 testes. In all these species caudal appendage is absent unlike the present new species *P. karachiensis* which has a large caudal appendage.

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