

# Biological Sciences Section

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## PLAGIOPORUS HETERORCHIS SP.N. (TREMATODA : OPECOELIDAE) FROM THE FISH POMADASYS OLIVACEUM (DAY) OF KAKACHI COAST

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**Abstract.** A new trematode, *Plagioporus heterorchis* sp.n., is described from the fish *Pomadasys olivaceum* (Day) of Karachi coast. This species is characterized by possessing a very small fore body; indistinct esophagus; cirrus sac extending slightly posterior to acetabulum; genital pore at the base of pharynx; testis showing great morphological variation; vitellaria follicular extending laterally, except posterior to testis, from the base of pharynx to posterior end of the body; eggs 0.041-0.076 mm by 0.03-0.04 mm and excretory vesicle extending to the base of posterior testis.

A large number of species of the genus *Plagioporus* Stafford, 1904 have been reported both from freshwater and marine fishes of different countries (Yamaguti, 1971) but none was known from Pakistani fishes. A new species *P. heterorchis* is reported here from a marine fish *Pomadasys olivaceum*. The species name refers to the morphological variations of the testis.

### Material and Methods

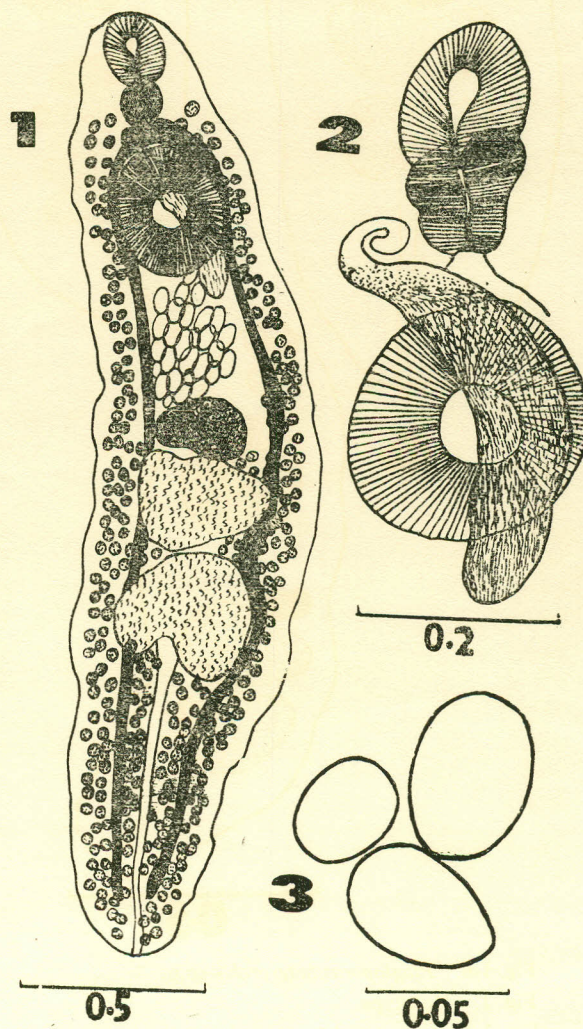
In March, 1975, viscera of a large fish *Pomadasys olivaceum* were brought to this laboratory from the West Wharf, Karachi, for collection of parasites. Only 4 trematodes were recovered from the intestine. For a detailed study permanent preparations were made by previous methods (Bilquees, 1974). Measurements are given length by width. Diagrams are made by a camera lucida. The holotype is in the School of Parasitology, Department of Zoology, University of Karachi.

### Description

*Plagioporus heterorchis*. Host : *Pomadasys olivaceum*, Location : Intestine, Locality : West Wharf, Karachi coast, Number : 4 specimens from a single host, holotype : SPUK 296.

Body length 1.35-2.34 mm; maximum 0.4-0.6 mm. Body tapering towards posterior end except in one specimen. Oral sucker 0.13-0.14 mm wide. Acetabulum 0.195-0.260 mm wide. Sucker ratio 1:1.5-1.9. Forebody 0.26-0.29. No prepharynx, pharynx 0.091-0.093 mm by 0.078-0.093 mm. Esophagus indistinct bifurcating immediately anterior to acetabulum, ceca extending to near about posterior end of the body.

Testes tandem variable in shape, smooth, notched or lobed close together, anterior testis just posterior to





middle of the body, 0.18-0.37 mm by 0.23-0.38 mm. Genital pore near the base of pharynx. Cirrus sac slightly curved extending slightly posterior to acetabulum 0.37-0.56 mm by 0.07-0.091 mm. Seminal vesicle large occupying most part of the cirrus sac

with few scattered gland cells towards the anterior of the sac, cirrus short and stout. Ovary immediately pre-testicular smooth, flattened, smaller than testis, 0.12-0.25 mm by 0.07-0.18 mm. Seminal receptacle indistinct. Vitelline follicles arranged laterally extending from the base of pharynx to the posterior end of the body, circumcecal posteriorly and mostly extracecal in anterior half of the body. Uterus preovarian. Eggs 0.041-0.076 mm by 0.03-0.04 mm. Excretory pore terminal, excretory vesicle tubular extending to the posterior testis.

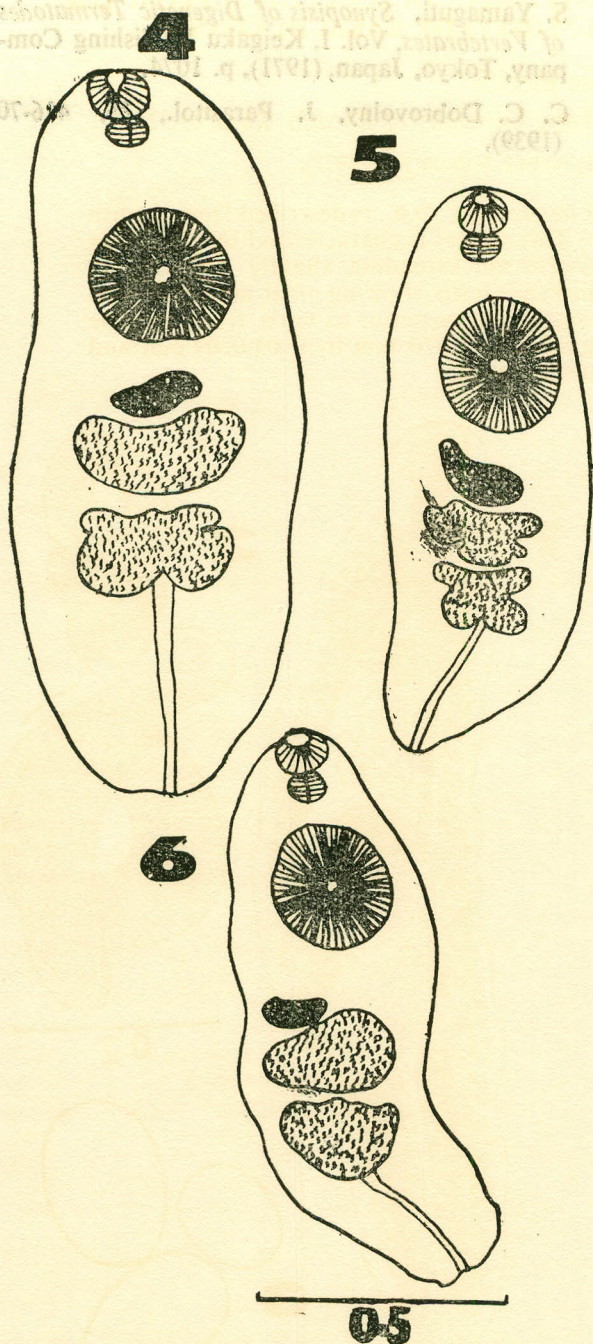


Fig. 1-6. *Plagioporus heterorchis* sp.n.  
 Fig. 1. Holotype.  
 Fig. 2. Cirrus sac and associated structures.  
 Fig. 3. Eggs.  
 Fig. 4-5. Paratypes showing variations in testis.

Discussion

The genus *Plagioporus* Stafford, 1904, consists of more than 50 species and is almost equally abundant in both marine and fresh water fishes. The similarity of the genus to other genera has been discussed by Manter (1947). Later he also proposed that the species *P. corassigulus* (Linton, 1910) Price, 1934, and *P. gastrocotylus* Manter, 1940 be transferred to other genus *Pachycreadium* (Manter, 1954) and provided a key for the species of the genus. But it seems that the key for a particular genus is useful only for the previous descriptions of species. For example, Manter's key for the genus *Plagioporus* was good enough for the species described up to that time. But it cannot be used now due to variations in the structures used in the key. For example the present species *P. heterorchis* sp.n. is somewhat similar to *P. preporatus* Manter, 1954 and *P. lobatus* Yamaguti, 1934 in having a lobed testis in some of the specimens but not in all. This indicates that only the morphology of the testis is not a valid character for the species designation in this genus as it shows variation within the species. Host distribution and other relevant facts also are important. In the opinion of the author it is desirable to point out the morphological variation within each species of a genus as well as making a key for genus. Because new species are made only on the basis of variations and different authors use different criteria to separate their species from the others. If we know which characteristics vary within a species, we will not use those characters for separating a species within the same genus.

The present species differs from most of the species of genus previously described mainly in having an indistinct esophagus, cirrus sac extending posterior to acetabulum and a very small fore body. Although superficially it seems close to *P. lobatus* Yam., 1934 ; *P. japonicus* Yam., 1938 ; and *P. preporatus* Manter, 1954, especially in the arrangement of vitellaria, the acetabulum being anterior to mid body, and in shape of the testis. But the testes show great variation in the four specimen studied and it also has a different position of the cirrus sac, more anteriorly situated acetabulum, and a different sucker ratio. As far as position of cirrus sac is concerned, the present species is close to *P. angusticolle* (Housmann, 1896) Dobrovolny, 1939, but differs in other diagnostic features, such as sucker ratio, egg sizes, shape of the testes and ovary.



It is, therefore, proposed that the present species is an undescribed one for which the name *P. heterorchis* is given indicating variations in the shape of testes.

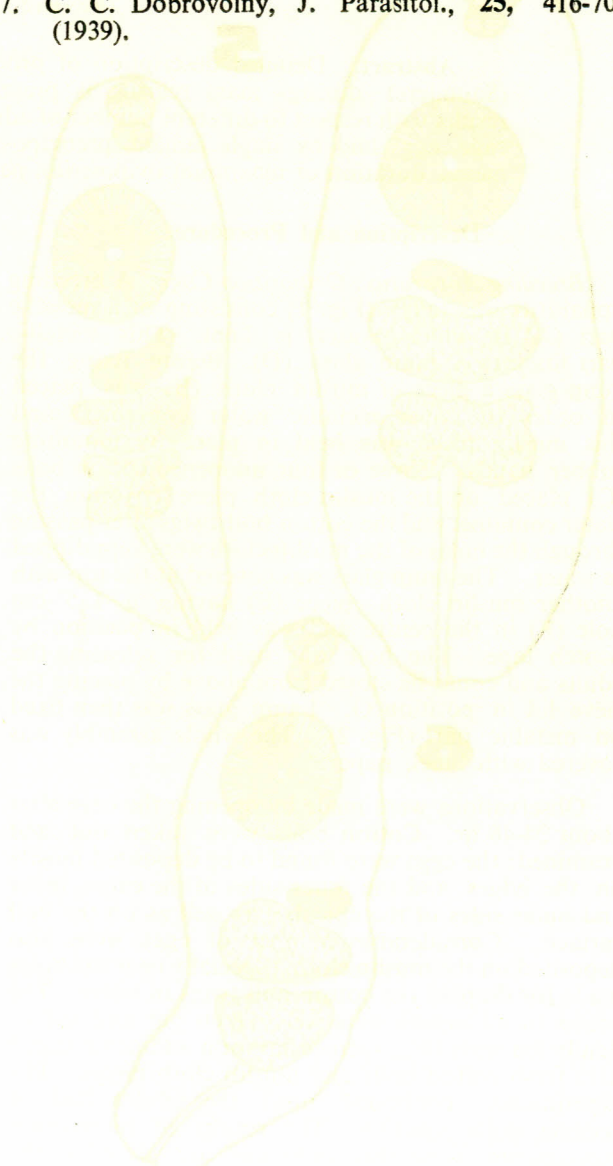
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The genus *Polydora* (Lubbock, 1859) consists of more than 30 species and is almost equally abundant in both marine and fresh water fishes. The similarity of the genus to other genera has been the cause of many errors in the literature. In the present study, the author has examined the type material of *P. heterorchis* (Manter, 1947) and has compared it with other species of the genus. It is concluded that *P. heterorchis* is a new species and is distinguished from other species of the genus by the shape of the testes. The author has also examined the type material of *P. heterorchis* and has compared it with other species of the genus. It is concluded that *P. heterorchis* is a new species and is distinguished from other species of the genus by the shape of the testes. The author has also examined the type material of *P. heterorchis* and has compared it with other species of the genus. It is concluded that *P. heterorchis* is a new species and is distinguished from other species of the genus by the shape of the testes.



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The present species differs from most of the species of the genus in having a single testis. The author has examined the type material of *P. heterorchis* and has compared it with other species of the genus. It is concluded that *P. heterorchis* is a new species and is distinguished from other species of the genus by the shape of the testes. The author has also examined the type material of *P. heterorchis* and has compared it with other species of the genus. It is concluded that *P. heterorchis* is a new species and is distinguished from other species of the genus by the shape of the testes.