

# *Parapolyekithum karachiensis* N. Gen. N. sp. (Digenea: Allocreadiidae: Allocreadiinae) from the Fish *Cybium guttatum* of Karachi Coast

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**SUMMARY:** A new trematode *Parapolyekithum karachiensis* n. gen, n. sp. from the intestine of the fish *Cybium guttatum* of Karachi coast has been described. The trematode is characterized by having small body without spines that is 1.3-1.5 by 0.37-0.38 in size. It has oral and ventral suckers almost equal in size, a relatively long pre-pharynx, a small poorly developed pharynx, a long esophagus, and ceca not reaching to posterior end of the body that terminate posterior to the posterior testis. The acetabulum is pre-equatorial. The testes are tandem in the posterior third of the hind body. The cirrus pouch is relatively large extending far behind the acetabulum, enclosing a rounded seminal vesicle, a prostatic complex and long cirrus with a tuft of hairs at the bottom. The genital pore is anterolateral to the acetabulum and the prominent genital atrium is surrounded by numerous gland cells. The ovary is median, posterior to acetabulum, before the testicles, and a seminal receptacle is present. Vitelline follicles extend from nearly the posterior end to the post-acetabular region. The uterus is between the ovary and acetabulum. Eggs are large, operculated and 0.056-0.058 mm by 0.035-0.036 mm in size.

**Key words:** *Parapolyekithum karachiensis*, Allocreadiidae, *Cybium guttatum*, Karachi coast

## **Pakistan'ın Karaçi kıyısından *Cybium guttatum* Balığında Saptanan *Parapolyekithum karachiensis* n. gen. n. sp. (Digenea: Allocreadiidae: Allocreadiinae)**

**ÖZET:** Yeni bir trematod olan *Parapolyekithum karachiensis* n. gen, n. sp. Karaçi sahilinde yaşayan bir balık olan *Cybium guttatum*'un bağırsağından elde edilmiş ve tanımlanmıştır. Trematod, 1.3-1.5mmX 0.37-0.38mm boyutlarında küçük, dikensiz, hemen hemen eşit boyutta ağız ve karın çekmenlerine sahip, biraz uzun prefarinks, küçük az gelişmiş bir farinks, uzun özafagus, vücudun arkasına kadar uzanmayan bir ceca ve arka kısımda sonlanan arka testislerle karakterizedir. Asetabulum ön ortadadır. Testisler vücudun arka kısmında arka arkaya dizilmiştir. Büyük olan SIRRUS kesesi asetabulumun arkasına uzanır, yuvarlak seminal vezikül, prostatik kompleks ve alttaki kıl demeti ile çevrilidir. Genital açıklık asetabulumun ön-yan kısmındadır ve çok sayıda belirgin bez hücreleri ile çevrilidir. Ovaryum asetabulumun arkasında ve ortadadır. Vitellin follikülleri arka uca yakın bir bölgeye kadar uzanır. Uterus ovaryum ve asetabulumun arasındadır. Büyük olan yumurtaların (0.056-0.058 mm by 0.035-0.036 mm) kapağı vardır.

**Anahtar Sözcükler:** *Parapolyekithum karachiensis*, Allocreadiidae, *Cybium guttatum*, Karaçi

## **INTRODUCTION**

*Cybium guttatum* is locally known as "Surmai", and it is a popular edible fish of Karachi coast. It is also a favourable host for several species of nematodes and acanthocephalan parasites. But trematode species have not been reported from this fish belonging to family Allocreadiidae Looss and subfamily Allocreadiinae. Therefore the trematodes recovered from the intestine of this fish during a routine collection of parasites are reported here. These trematodes are different from the existing four genera of subfamily Allocreadiinae

Looss 1902 therefore a new genus *Parapolyekithum* is erected to accommodate these trematodes. The genus name refers to one of the genera *Polylekithum* Arnold, 1934 of the subfamily which has similar position of the testes as compared to the new genus. The species name *P. karachiensis* indicates locality of the host.

## **MATERIAL AND METHODS**

Seven specimens of *Cybium guttatum* were examined during a routine examination for parasites. With other parasites from one fish, two delicate trematodes were recovered from the intestine which were processed by usual methods. These were fixed in AFA (a mixture of 70% alcohol, formaline, and acetic

acid in the ratio of 90: 7:3) under slight cover glass pressure for 24 hours, washed several times with 70% alcohol, stained in Mayer's carmalum, dehydrated in graded series of alcohols, cleared in clove oil and xylene and mounted permanently in Canada balsam. Diagrams were made with the help of a camera lucida and measurements are given length by width in millimeters.

**RESULTS**

***Parapolylekithum Karachiensis* n. gen. n. sp. (Figs. 1-3)**

Host : *Cybium guttatum*

Location : Intestine

Locality : Karachi coast

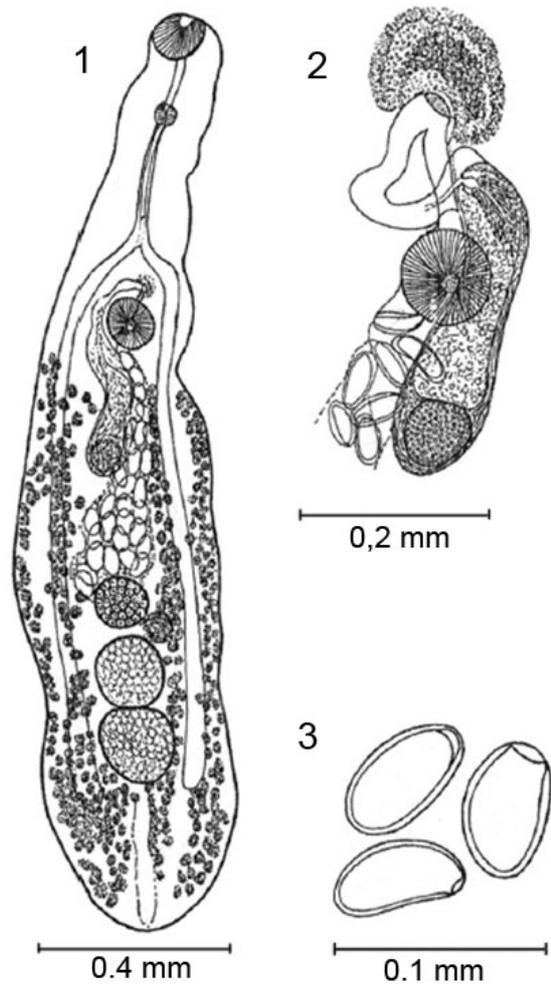
Number of Specimens : 2 from a single host, 7 hosts examined.

Small trematodes, body without spines measuring 1.5 - 1.65 by 0.35 - 0.38. Oral sucker terminal, 0.05 - 0.07 in diameter. Prepharynx relatively long, 0.09 - 0.11 in length, pharynx much smaller than oral sucker, 0.020 to 0.023 in diameter. Esophagus long, 0.25 - 0.28 in length, caecae long but not reaching to posterior extremity. Acetabulum pre-equatorial, almost equal or slightly smaller than oral sucker, 0.050 - 0.068 in diameter. Testes tandem almost rounded in posterior third of the body measuring 0.10 - 0.12 by 0.11 - 0.12. Cirrus pouch relatively large extending immediately anterior or slightly anterior to acetabulum, 0.27 - 0.33 by 0.09-0.15, enclosing a rounded seminal vesicle, prostatic complex and long cirrus. At the bottom of the cirrus a prominent hairy tuft is present looking like a brush. Seminal vesicle almost 0.055 - 0.060 in diameter. External seminal vesicle is absent.

Genital pore anterolateral to acetabulum near or at equal distance to the intestinal bifurcation. Genital atrium glandular, relatively large. Ovary much posterior to acetabulum, pretesticular, median, rounded, smaller than testes 0.075 - 0.089 in diameter. Seminal receptacle postovarian, eccentric, small, 0.031 - 0.049 in diameter. Vitelline follicles extensive, postacetabular extending laterally on both sides of the caecae, more numerous at posterior extremity and reaching far posterior to caecae. Uterus between ovary and acetabulum, Eggs operculate, relatively few, large, elongate, measuring 0.056 - 0.058 by 0.035 - 0.036. Excretory vesicle simple, tubular, not extending to anterior body region.

**Genus diagnosis:** *Parapolylekithum* n. gen., Allocreadiidae, Allocreadiinae body small, unspined. Oral sucker terminal, prepharynx relatively long, pharynx small, esophagus long, caeca thin, long, not reaching to posterior extremity. Acetabulum pre-equatorial, equal or slightly smaller than oral sucker. Testes tandem in posterior third of body. Cirrus pouch large extending anterior to acetabulum much posterior to it enclosing rounded, seminal vesicle, prostatic complex and long cirrus at the bottom of which a hairy tuft is present. Genital pore anterior and slightly lateral to acetabulum nearer to it than intestinal bifurcation. Genital atrium prominent,

glandular, ovary median, much posterior to acetabulum, in posterior half of the body, close to anterior testis, seminal receptacle present. Vitelline follicles well developed extending from postacetabular region to near posterior end of body. Uterus between ovary and acetabulum. Eggs large. Excretory vesicle simple, tubular. Parasites of marine fish. Type species: *Parapolylekithum Karachiensis* n.gen. n. sp., in *Cybium guttatum* of Karachi coast, Pakistan.



**Figure 1-2. *Parapolylekithum karachiensis*; 3. Eggs**

**DISCUSSION**

In the trematode subfamily allocreadiinae looss, 1902 there are five genera (4) including *Austrocreadium* szidat, 1956; *Polylekithum* Arnold; 1934 (syn. *Procreadium* Mehra, 1962); *Allocreadium* looss, 1900; and *pseudallocreadium* yamaguti, 1972. Among these except in *Polylekithum*, caecae reach to posterior extremity. In *Austrocreadium* the cirrus pouch contains bipartite seminal vesicle, vitelline follicles are

large extending from shell gland to posterior extremity and uterus between anterior testis and acetabulum. In *Polylekithum* cirrus pouch is small, preacetabular enclosing winding, tubular seminal vesicle, vitellaria extending from the level of pharynx to posterior extremity, uterus usually between anterior testis and acetabulum while in the genus *Allocreadium* cirrus pouch has well developed winding seminal vesicle, vitellaria in hindbody but may extend into the forebody, uterus between anterior testis and acetabulum. Genus *Pseudallocreadium* is characterized by having cirrus pouch anterior or anterodorsal to acetabulum, vitelline follicles comparatively large, extending in lateral fields commencing at the level of acetabulum or ovary.

The present new genus can not be accommodated in the existing five genera of the subfamily Allocreadiinae but one character is similar to *Austrocreadium* in which ceca terminate short of posterior extremity reaching far behind posterior testis but the oral sucker is very large and prepharynx and esophagus is very small and indistinct, the vitellaria are large and are from level of shell gland to posterior extremity. Uterus is short, situated between anterior testis and acetabulum. Cirrus pouch does not extend far behind the acetabulum, while in the present genus oral sucker is comparatively very small, prepharynx is long and esophagus is very long, vitelline follicles are small extending from posterior extremity to the post acetabular region and uterus is between ovary and acetabulum and excretory vesicle is tubular. In *polylekithum* although the ceca are long reaching to posterior extremity but grossly it appears close to the new genus as far as ratio of oral and ventral sucker, position and shape of testes is concerned

which are in the posterior region of the hind body. Therefore the genus name *parapolylekithum* is proposed, but again it is different from the new genus because in the *polylekithum* prepharynx is indistinct esophagus is small, cirrus pouch does not reach far behind the acetabulum, vitelline follicles extending from level of pharynx to posterior extremity. The present genus is characterized by having long prepharynx and esophagus, ceca not reaching to posterior extremity and terminating at the posterior testis, testes in posterior third of hind body, cirrus pouch large extending far behind the acetabulum, rounded seminal vesicle, long cirrus with tuft of hairy structures at the bottom, vitelline follicles extending from post acetabular region to posterior end of body, uterus between ovary and acetabulum. Combination of these characters make it different from the existing five genera of the subfamily allocreadiinae. The species name refers to the locality of the host.

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