

## ***Decemtestis johnii* New Species (Trematoda: Opecoeliidae Ozaki, 1925) From the Fish *Lutjanus johnii* of Karachi Coast**

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**Abstract.-** A new trematode *Decemtestis johnii* is described here from the fish *Lutjanus johnii* of Karachi coast. The new species is characterized by having a small, flattened body, forebody narrow, hind body broader, oral sucker sub-terminal, acetabulum larger than oral sucker, pre-equatorial, pre-pharynx absent, pharynx pear-shaped, oesophagus relatively long, caecae simple, long. Genital pore is at the base of oesophagus, cirrus sac long extending between anterior level of acetabulum and base of oesophagus, testes 10 in two inter-caecal rows in posterior half of the body. Ovary consists of 7-8 lobes immediately anterior to testes, uterus coiled, small, between ovary and ventral sucker extending anteriorly to the level of genital atrium. Eggs are numerous, oval in shape. Vitellaria are follicular, numerous, scattered laterally from the anterior to ventral sucker and posteriorly to the end of the body, confluent in the posterior body region. Excretory vesicle is extending to the level of anterior pair of testes.

**Key words:** *Decemtestis johnii*, new species, *Lutjanus johnii*, Karachi coast, trematode.

### INTRODUCTION

The genus *Decemtestis* was established by Yamaguti (1934) for three species, *D. sillagonis*, *D. callionymi* and *D. ditrematis* which have ten testes and non-filamentous eggs with or without polar prolongation. Yamaguti (1934) also transferred *Helicometrina azumae* Layman, 1930 to *Decemtestis* on the basis of non-filamented eggs and position of genital pore different from that in *Helicometrina* Linton, 1910. Manter (1933) had placed *H. azumae* under the genus *Rhagorthis* Manter, 1931 firstly, because of its non-filamented eggs, and secondly, because of its morphological similarity to *Rhagorthis odhneri* Manter, 1931 and its occurrence in a related host. Srivastava (1936) added three more species to *Decemtestis*, *D. brevicirrus*, *D. mehrai* and *D. biacetabulata*, all from fishes of the Bay of Bengal. The last named species has two concentric acetabula, one enclosed within the other. Accordingly, Srivastava (1936) gave an emended diagnosis of *Decemtestis*. Later, more species were added by Yamaguti (1938, 1951, 1959), Park (1939) and Manter (1954).

The genus *Decemtestis* Yamaguti, 1934 contains relatively few species (Yamaguti, 1971). Most of the species are from Japan (Yamaguti,

1934, 1938, 1951) few from India and other regions (Srivastava, 1936; Park, 1939; Manter, 1954) but there is no report of genus in fishes of Karachi coast. Present is the first report of a new species of the genus *Decemtestis johnii* from the fish *Lutjanus johnii* (Lutianidae) of Karachi coast. The species name refers to the fish species. Previously species of the genus *Decemtestis* is not known from this fish.

The genus *Decemtestis* was proposed by Yamaguti, 1934 for *D. sillagonis* Yamaguti, 1934 from a sillaginid fish in Japan and now contains about 25 nominal species parasitic in marine fishes. It is easily recognized by the combination of 9 or 10 testes and eggs without filaments. It is presumably close to *Helicometrina*, from which it differs only in the absence of filaments on the eggs (although eggs of *D. sillagonis* are described as having polar prolongations, most species are described as being without any protuberance) and in having a sinistral rather than median genital pore. *Allodecemtestis* Hafeezullah, 1970 was proposed by Hafeezullah, 1970a for *Decemtestis biacetabulatus* Srivastava, 1936 and *D. pseudolabri* Manter, 1954 trematodes related to *Decemtestis* in which there were 'two ventral suckers', 'one concentrically enclosed within other'. Three further species have been proposed: *A. bilqeesae* Ahmad, 1990; *A. skrjabini* Ahmad, 1981 and *A. odeningi* Ahmad, 1988 by Ahmad (1988, 1990). The structure of the concentric ventral suckers has never been explained adequately, but the interpretation of the presence of two suckers is not

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plausible. These species are here all considered species of *Decemtestis*, requiring the new combinations *D. bilqeesae* Ahmad, 1990 n. comb., *D. odeningi* Ahmad, 1988 n. comb. and *D. skrjabini* Ahmad, 1988 n. comb.

## MATERIALS AND METHODS

Thirty seven fishes *Lutjanus johnii* were collected from West Wharf, Karachi and examined for trematode parasites, out of these one fish was infected and 2 trematodes were recovered from intestine. These specimens were fixed in AFA solution for 24 hours under slight pressure of two glass slides, stained with Carmine alum, 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 Camera lucida. Measurements are given length by width in millimeters. Specimens are at present in the collection of Department of Zoology, Jinnah University For Women, Karachi. The holotype will be deposited in the Natural History Museum, Cromwell Road, London.

### *Decemtestis johnii*, new species (Fig. 1)

Host	<i>Lutjanus johnii</i> (Lutianidae)
Location:	Intestine
Locality:	West Wharf, Karachi.
No. of Specimens:	2 from 1 fish, 37 fishes were examined.
Holotype :	JUW-T3
Paratype:	JUW-T4

Relatively small trematodes, body smooth, flattened with narrow fore body and broader hind body. Anterior end bluntly rounded and posterior end broadly rounded, greatest width in the middle. Oral sucker is sub-terminal, rounded, pre-oral lobe very small, pre-pharynx not present, pharynx pear-shaped, oesophagus relatively long. Caeca are simple, long reaching to near posterior extremity of body. Acetabulum rounded, larger than oral sucker, highly muscular. Genital pore is immediately above the intestinal bifurcation at the base of oesophagus. Cirrus sac is long extending from the anterior level of acetabulum to the base of oesophagus containing bi-lobed seminal vesicle at the base, a small pars

prostatica and a long ejaculatory duct ending into a small, shallow genital atrium. The male and female ducts open separately in the genital atrium. Testes are 10 in two rows, 5 in each row, spherical in shape, almost smooth.

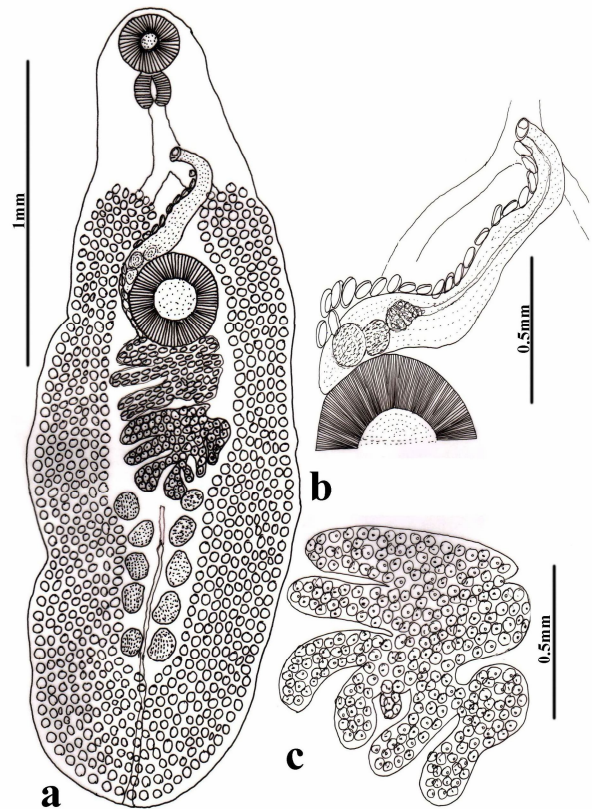


Fig. 1. *Decemtestis johnii*, new species, holotype, entire (a); cirrus sac and associated structures (b); ovary enlarged (c).

Ovary in posterior half of body, deeply lobed, slightly post equatorial with 7-8 prominent lobes, 5 lobes large and 2-3 small projections, close to anterior first pair of testes. Uterus small, coiled anterior to ovary, eggs numerous, oval in shape. Vitellaria consist of numerous rounded follicles extending anteriorly anterior to acetabulum, terminating posteriorly to intestinal bifurcation, confluent in the posterior region and reaching to posterior extremity of the body. Excretory pore is terminal, excretory vesicle is tubular, extending anteriorly to the level of anterior pair of testes.

*Measurements (mm)*

Body size, 2.65-2.71 x 0.86-0.89; oral sucker, 0.20-0.21; oesophagus, 0.31-0.33 x 0.90-0.10; ventral sucker, 0.41-0.43 x 0.29-0.3; sucker width ratio, 1:1.4; pharynx, 0.11-0.12 x 0.130-0.133; testes, 0.07-0.09 x 0.11-0.12; ovary, 0.35-0.37 x 0.32 - 0.33; cirrus pouch, 0.645-0.67 x 0.05-0.07; seminal vesicle, 0.40-0.48 x 0.14-0.16; eggs, 0.04-0.07 x 0.011-0.020; excretory vesicle, 0.91-0.93; distance of posterior testes from posterior extremity, 0.49-0.51.

**DISCUSSION**

The present specimens are included in the genus *Decentestis* Yamaguti, 1934 as these are small trematodes with lanceolate body, unarmed, hind body with slightly crenulated lateral margins, oral sucker sub-terminal, medium sized, oesophagus bifurcating at about middle of fore body, caeca terminating near posterior extremity, testes 10 in number, in two more or less irregular longitudinal rows in posterior half of the body, cirrus pouch elongate, extending over acetabulum slightly overlapping the anterior border, enclosing the winding seminal vesicle, genital pore sub median, ovary immediately pre-testicular, uterus coiled between testes and acetabulum. Eggs are not filamented. Vitellaria are extending in lateral fields from posterior to intestinal bifurcation to posterior extremity, confluent in post-testicular area. Excretory vesicle is tubular reaching to level of anterior testes.

The genus was erected by Yamaguti (1934) with type species *D. sillagonis* in *Sillago sihama* from Japan. Later on several other species have been described including *D. azumae* (Layman, 1930) Yamaguti, 1934; *D. bera* Yamaguti, 1938; *D. callionymi* Yamaguti, 1934; *D. ditrematis* Yamaguti, 1934; *D. goniistii* Yamaguti, 1934; *D. megacotyla* Yamaguti, 1938; *D. neopercis* Yamaguti, 1938; *D. pagrosomi* Yamaguti, 1938; *D. parapercis* Yamaguti, 1938; *D. spari* Yamaguti, 1938; and *D. takanoha* Yamaguti, 1951. The species reported from India are *D. biacetabulatus* Srivastava, 1936; *D. brevicirrus* Srivastava, 1936; *D. mehrai* Srivastava, 1936. Other species of the genus reported are *D. kobayashii* Park, 1939; and *D.*

*pseudolabri* Manter, 1954 from Korea and New Zealand.

Species of the genus *Decentestis* has not been reported previously from fishes of Karachi coast. Present is the first report describing a new species *D. johnii*. The present new species is different from the Japanese species in the size of body, sucker width ratio, anterior extension of vitellaria, shape of ovary, shape of testes, position of genital opening. In *D. neopercis*, *D. goniistii*, *D. bera*, *D. spari*, *D. pagrosomi*, the testes are mostly transversely elongated and are relatively large. In *D. megacotyla* acetabulum is large and transversely elongated, the testes are also distinctly transversely elongated.

In all these species the genital opening is at the base or anterior level of pharynx while it is at the base of intestinal bifurcation in the present new species. The ovary in the above mentioned species is irregular or four lobed while it is 7-8 lobed in the present new species. The cirrus sac in *D. pagrosomi* and *D. spari* is also extending to posterior level or posterior to acetabulum while it is terminating at the anterior level or slightly overlapping the acetabulum in the present new species.

The species *D. sillagonis* and *D. callionymi* are different from the present species in having the genital opening at the level of pharynx and ovary with 3-4 lobes. In *D. callionymi* the vitellaria is also interrupted at the acetabular level and the cirrus sac is extending far posterior to acetabulum. In *D. ditrematis* the arrangement of testes is different, two longitudinal rows of 4 each and one anterior and posterior in the center. *D. pseudolabri* is much smaller ( 0.539-0.616 x 0.2- 0.246 ) than the present species. *D. biacetabulatus* is also smaller with bilobed acetabulum and from a different fish. *D. brevicirrus* is from a different fish host, has small cirrus and small body. In the two above species vitelline extension is also variable as compared to the present species.

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