

**MICROVESICULA OTOLITHI N.GEN., N.SP. (TREMATODA: HEMIURIDAE: LECITHASTIRINAE) FROM THE FISH OTOLITHUS ARGENTEUS (C.V.) OF KARACHI COAST, PAKISTAN**

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**ABSTRACT**

A new hemiurid trematode *Microvesicula otolithi* n.gen., n.sp. is described here from the fish *Otolithus argenteus* of Karachi coast. This trematode is characterized by having a more or less spindle-shaped body without tail, oral sucker small, pharynx and esophagus are also small, ceca long and thick reaching to near about the posterior end, acetabulum 3 or more times larger than oral sucker, testes almost symmetrical posterior to this, seminal vesicle small, pear-shaped, genital opening posteroventral to pharynx. Ovary is bean-shaped, larger and posterior to testes, seminal receptacle larger than ovary and postovarian. Vitelline tubules 7 radiating from posterior to ovary and laterally extending to the cecal and extracecal regions, situated in posterior third of the body. Uterus extending from preovarian to prebifurcal region, with numerous, small eggs.

**Keywords:** Hemiurid trematode, new genus, new species, intestine, fish, Karachi coast.

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**INTRODUCTION**

A large number of hemiurid fish trematodes are worldwide in distribution, including Pakistan. Several hemiurid trematodes are already known from fishes of Karachi coast (Bilqees, 1981; Shaukat & Bilqees, 2005). Here a new hemiurid trematode genus *Microvesicula* of subfamily Lecithasterinae Odhner, 1905 is reported and described with the genotype *M. otolithi* from the fish *Otolithus argenteus* of Karachi coast. This is a first report of trematode of subfamily Lecithasterinae from Pakistan.

**MATERIALS AND METHODS**

During a continuous study on trematodes of fishes of Karachi coast 79 fishes *Otolithus argenteus* were collected during Nov. 2006 – June 2008 and examined. Out of these two trematodes were recovered from the intestine of a single fish. These were processed for a detail study, fixed in hot 70% ethanol with few drops of acetic acid, stained with Mayer's carmalum, dehydrated, cleared and mounted permanently in Canada balsam by usual method. Diagrams were made with a camera Lucida and measurements were given length by width in millimeters. Holotype and paratype specimens are in the collection of the senior author and will be deposited in a central place.

***Microvesicula otolithi* n.gen., n.sp.**

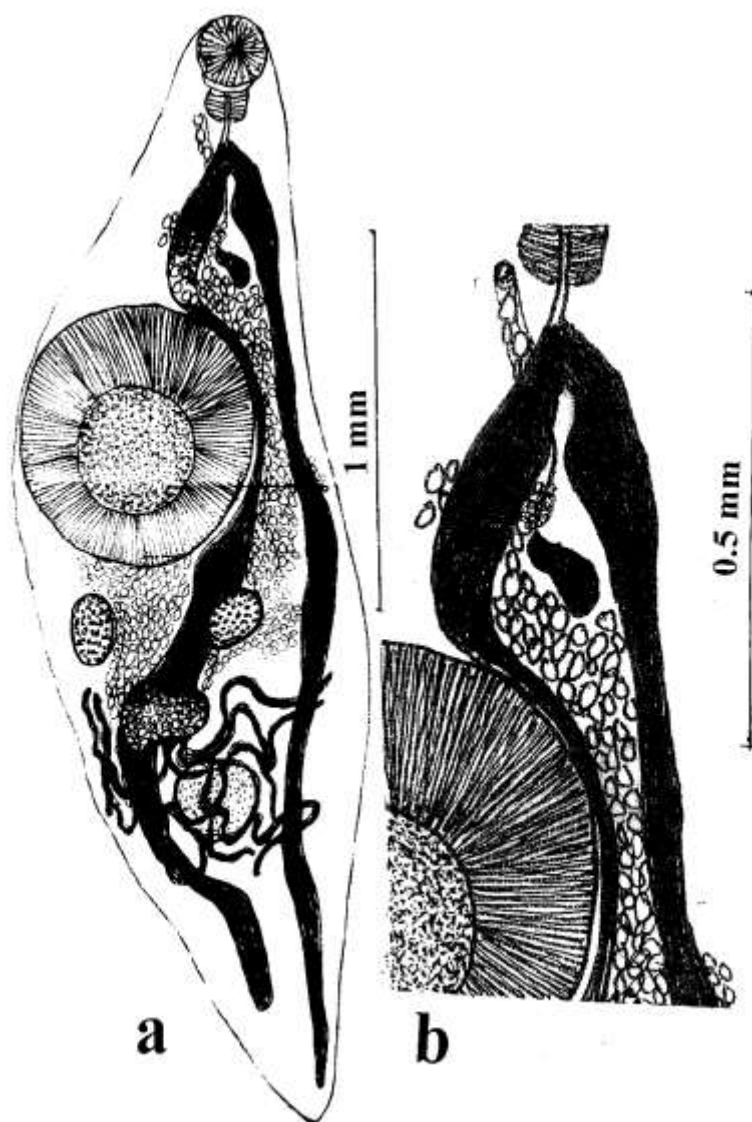
(Fig. 1)

Host	<i>Otolithus argenteus</i> (Sciaenidae)
Location	Intestine
Locality	Karachi coast
No. of specimens	3 from a single host, 79 fishes examined
Holotype	BMC-T306

Body elongate, smooth, without tail,  $2.84-2.86 \times 0.81-0.92$ , anterior and posterior ends are narrow, and bluntly pointed, widest at the acetabular level. Oral sucker terminal, round,  $0.17-0.18$  in diameter, prepharynx very small, just a line between oral sucker and pharynx. Pharynx  $0.06-0.061 \times 0.09-0.10$ , esophagus is small,  $0.1-0.12$  long, ceca long reaching to near posterior end of the body. Acetabulum is large, rounded,  $0.64-0.68$  in diameter, sucker-width ratio 1:3-3.6.

Testes two, oval in shape, postacetabular, seminal vesicle pear-shaped, preacetabular  $0.18-0.21 \times 0.05-0.07$  in size, pars prostatica small, genital pore posteroventral to pharynx. Ovary bean-shaped, post-testicular,  $0.15-0.16 \times 0.24-0.26$ , seminal receptacle larger than ovary and posterior to it measuring  $0.18-0.19 \times 0.25-0.29$ . Vitellaria

consisting of seven convoluted tubules extending laterally in the cecal region, situated in the posterior third of the body but not reaching to posterior end. Uterus large containing numerous eggs extending from anterior region of ovary, passing between the testes, then dorsal to acetabulum and reaching to genital opening ventral to the base of pharynx.



**Fig.1a-b:** *Microvesicula otolithi* n.gen., n.sp., a) whole mount genotype specimen, b) preacetabular region showing seminal vesicle, small pars prostarica and genital opening ventral to base of pharynx.

#### REMARKS

Present specimens are included in hemiurid subfamily Lecithasterinae Odhner, 1905 in having body fusiform without tail, pharynx well developed, esophagus very short, ceca terminating near posterior end of body, acetabulum large, in anterior half of the body, testes symmetrical, postequatorial, ovary posterior to testes, seminal receptacle present. Although the present specimens do not possess seminal vesicle posterior or posterodorsal to acetabulum, hermaphroditic duct or pouch is not present, vitellaria is not compact or lobed instead these are tubular and long, uterus also does not extend posterior to vitellaria.

Manter and Pritchard (1960) included more than 30 genera which are assigned by Yamaguti (1971) to many different subfamilies. Here we follow Yamaguti.

The genus *Aphanurus* Looss, 1907 has single, compact vitellaria; in genus *Mitrostoma* Manter, 1954, vitellaria consist of two compact lobes; in *Macrodera* Linton, 1910 vitellaria are divided into a number of claviform lobes. In genus *Aphanuroides* Nagaty *et* Abdel-Aal, 1962 vitellaria are also composed of two compact lobes; *Acanthuritrema* Yamaguti, 1970 has vitellaria consisting of 14 rounded follicles; in *Lecithaster* Lühe, 1901 vitellaria consist of seven rosette-shaped, or claviform lobes; in *Dichodena* Linton, 1910 vitellaria also consist of seven rosette-shaped lobes; in *Neodichodena* Yamaguti, 1971 vitellaria consist of eight rosette-shaped lobes; *Pseudodichodena* Yamaguti, 1971 has vitellaria divided into seven, distally enlarged digitiform lobes; in *Monoheamacrodina* Nahas *et* Cable, 1964 vitellaria consist of seven tubular lobes. While in the present species there are seven vitelline tubules immediately posterior to ovary, shape and position of seminal vesicle is different in all the above mentioned genera as compared to the present new genus. Seminal vesicle in the present specimens is pear-shaped and preacetabular. Position of genital opening also varies, hermaphroditic duct and pouch is also absent in the present specimens. Uterus in the present genus is between ovary and genital pore while in other genera it reaches much posterior behind ovary and vitellaria.

The above mentioned differences in the important diagnostic features suggest that the present is an undescribed genus of the family. Therefore, a new genus *Microvesicula* is proposed with the type species *M. otolithi*, referring to the small seminal vesicle and host species.

### Genus diagnosis

Hemiuridae Lüke, 1901: Lecithasterinae Odhner, 1905; *Microvesicula* n.gen.. Hindbody cylindrical and spindle-shaped, acetabulum much larger than oral sucker, pre-equatorial. Intestinal ceca extending posteriorly and terminating near about posterior end of body. Testes symmetrical, far apart, in middle of body. Seminal vesicle is preacetabular, small, pear-shaped, hermaphroditic pouch absent, pars prostatica poorly developed, genital pore at level of pharynx. Ovary is bean-shaped, seminal receptacle larger, posterior and separate from ovary, vitellaria consisting of seven convoluted tubules extending laterally in the cecal region, uterus confined between ovary and genital pore not extending beyond ovary and vitellaria, eggs numerous, elongate.

Genotype: *Microvesicula otolithi* n.gen., n.sp.

Type host: *Otolithus argenteus* (C.V.)

Type locality: Karachi coast, Pakistan

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