

***Conica trilobata* n.gen., n.sp. (Trematoda: Hemiuridae: Dinurinae) From the Fish, *Otolithus argenteus*, of Karachi Coast**

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Abstract.- A trematode *Conica trilobata* n.gen. n.sp., with unique characters not previously known in family hemiuridae is describe here from the intestine of the fish *Otolithus argenteus* of Karachi coast. This trematode is characterized by having the oral sucker covered with a large cone, a trilobed, subterminal oral sucker, caeca long, reaching posteriorly almost to the tail end, acetabulum four to five times larger than oral sucker, prominent pharynx and esophagus. Testes are two a little behind acetabulum, postequatorial symmetrical, rounded, seminal vesicle elongate, preacetabular and far anterior to it, cirrus sac is also elongate, concave ventrally and convex dorsally, internal structure not differentiated, pars prostatica not visible, genital pore post bifurcal and submedian. Ovary is rounded, submedian, seminal receptacle also rounded, slightly posterior and lateral to ovary. Vitellaria consist of 7 long tubes, posterior to ovary. Uterus slightly extending into tail. Eggs numerous, elongate.

Key words: Trematode, oral cone, new genus, new species, intestine, fish, Karachi coast, Pakistan.

INTRODUCTION

Hemiurids are the common parasites of fishes of Karachi coast Hemiurid genera reported from fishes of Karachi coast include *Ectenusrus* Looss, 1907; *Erilepturus* Woolcock, 1935; *Lecithocladium* Lühe, 1901; *Tubulovesicula* Yamaguti, 1934; *Uterovesiculurus* Skjabin et Guschonskaja, 1954; *Hysterolecitha* Linton, 1910; *Qadriana* Bilqees, 1971; *Lecithochirium* Lühe, 1901; *Sterrhurus* Looss, 1907; *Stromaturus* Bilqee & Khatoon, 2003; *Acerointestinecola* Jehan, 1970; *Allostomachicola* (Srivastava, 1939) Yamaguti, 1958; *Cameronia* Bilqees, 1971; *Cestodera* Bilqees, 1971; *Segmentatum* Bilqees, 1971; *Stomachicala* Yamaguti, 1934; *Trifoliovarium* Yamaguti, 1940; *Prosorchis* Yamaguti, 1934; *Magnacetabulum* Yamaguti, 1934; *Mecoderus* Manter, 1940. Several species of the above mentioned genera are known (Bilqees, 1981; Shaukat and Bilqees, 2005; Shaukat *et al.*, 2008). During the present investigation a hemiurid trematode with oral cone, a unique character was recovered and regarded belonging to an undescribed genus and named *Conica trilobata*

n.gen. n.sp., referring to the oral cone and trilobed oral sucker.

MATERIALS AND METHODS

Seventy nine fishes *Otolithus argenteus* were collected during a period of one year (Dec. 2006 – Dec. 2007) from the fish harbour, West Wharf, Karachi. These were examined for trematodes. Two mature and one immature specimens were recovered from a single fish. These were fixed in hot 70% ethyl alcohol, stained with 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 Photograph of the oral region is prepared using Nikon (Optophot-2) Photomicroscope. Measurements are given length by width in millimeters. Holotype, paratype and other specimen are in the collection of the Department of Zoology, Jinnah University for Women, Karachi and accessible to other scientists.

Genus diagnosis

Conica n.gen., Hemiuridae, Dinurina. Body fusiform, smooth, tail short, widest at the ovariovitelline zone. Oral region is peculiar in having a prominent oral cone covering the trilobed oral sucker, pharynx and esophagus. Esophagus is

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small, caecae long, almost reaching to the posterior end of tail, Accetabulum more than four to five times larger than oral sucker. Testes two, rounded, symmetrical, postacetabular, and far anterior to it, cirrus sac intercecal, concave ventrally and convex dorsally, pointed on both sides, genital opening submedian, postbifurcal. Ovary is rounded, post-testicular, seminal receptacle slightly posterior and ventral to ovary. Mehlis' gland and juels' organ not prominent. Uterus slightly extending into tail, metraterm poorly developed. Eggs are numerous, elongate. Excretory vesicle is not prominent. Parasite of marine fish.

Genotype

Conica trilobata n.gen., n.sp.

Type host

Otolithus argenteus

Type locality

Karachi coast

Etymology

Genus name refers to the presence of oral cone and species to the trilobed oral sucker.

Conica trilobata, new species
(Figs. 1-3)

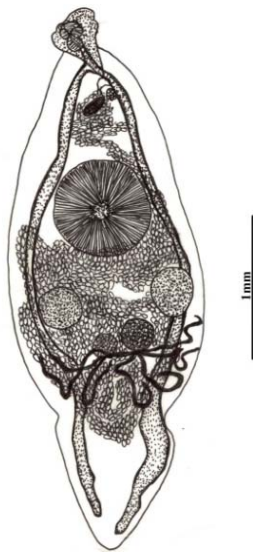


Fig. 1. Whole-mount holotype of *Conica trilobata* n.gen. n.sp.

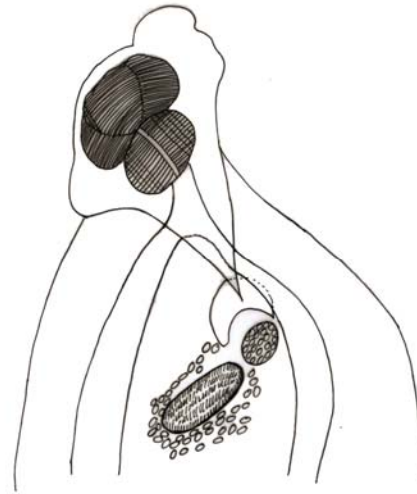


Fig. 2. Preacetabular region of *Conica trilobata* showing oral region with oral cone, seminal vesicle, cirrus sac and postbifurcal genital opening.



Fig. 3. Preacetabular region of *Conica trilobata* showing oral region with oral cone, seminal vesicle, cirrus sac and postbifurcal genital opening.

Host:	<i>Otolithus argenteus</i>
Location	Intestine
Locality	West Wharf, Karachi coast, Pakistan
No. of specimens	2 mature and one immature specimens from a single fish, 79 fishes examined
Holotype No.	BMC-T304

Body is fusiform, smooth, narrow anteriorly and posteriorly, greatest width at the level of testes, tail short, conical, bluntly pointed. Body length

including tail 3.79-4.0, body proper 2.7-2.8, maximum width 1.2-1.4. Oral region is peculiar in having a prominent oral cone covering the oral sucker, pharynx and esophagus, wider anteriorly, terminating posteriorly into a pointed cone, 0.55-0.61 x 0.40-0.45. Oral sucker is trilobed, 0.15-0.16 x 0.16-0.17, pharynx slightly wider than long, 0.15-0.16 x 0.17-0.19. esophagus is small, covered with oral cone, 0.19-0.2 in length. Cecae long, unequal, reaching to almost posterior end of tail. Acetabulum is much larger than oral sucker, 0.74-0.75 x 0.74-0.755. Sucker width ratio is 1:5.

Testes are two, rounded, symmetrical, situated little posterior to acetabulum 0.30-0.330 x 0.35-0.355. External seminal vesicle is preacetabular, far anterior, elongate, 0.10-0.12 x 0.2-0.23, cirrus sac is small, intercecal, concave ventrally and convex dorsally, pointed on both sides, 0.09-0.12 x 0.17-0.19. Internal structures are not distinct, genital opening submedian, postbifurcal. Ovary is post-testicular, rounded, 0.27-0.28 x 0.27-0.75, seminal receptacle is slightly posterior and ventral to ovary, smaller than ovary, rounded, 0.17 in diameter. Uterus slightly extending into tail, occupying the intercecal field of hind body, extending into preacetabular region and joining the genital pore. Metraterm is poorly developed. Eggs numerous, elongate. Excretory vesicle is not prominent.

DISCUSSION

The present specimens are included in the family Hemiuridae because of tubular vitellaria and other diagnostic features. Among the subfamilies of family Hemiuridae Looss, 1899, Glomericirrinae, Yamaguti, 1958; Hemiurinae Looss, 1899; Bunocotylineae Dollfus, 1950; Derogeninae Nicoll, 1910; Dissosaccinae, Yamaguti, 1958; Gonocerinae Skrjabin et Guschanskaja, 1955; Halipeginae Ejasmont, 1931; Hypohepaticolinae Skrjabin et Guschanskaja, 1954; Lecithasterinae, Odhner, 1905; Lethadeninae Yamaguti, 1971; Liopyginae Ejasmont, 1931; Macroderinae Skrjabin et Guschanskaja, 1954; Quadrifoliovarinae. Yamaguti, 1965; Opisthadininae Yamaguti, 1970; Trifoliovarinae (Yamaguti, 1958) Yamaguti, 1971;

the vitellaria consist of one or two compact masses or digitiform to elongate lobes, consisting of seven rounded follicles, or roset-shaped digitiform lobes. In Hysterolecithinae Yamaguti, 1958 vitellaria are also roset-shaped and seminal vesicle is tubular, winding or not and are different from the present specimens of the new genus. The seminal vesicle in these subfamilies is also posterior or posterodorsal to acetabulum.

In subfamily Sterrhurinae Looss, 1907, vitellaria is divided in seven, plump or digitiform lobes and sometimes tubular, the seminal vesicle is twisted and anterodorsal to acetabulum.

In Prosochiinae Yamaguti, 1934; vitellaria are tubular, long but testes are entirely or largely preacetabular and seminal vesicle is pretesticular.

Subfamily Stomachicolinae Yamaguti, 1958 is characterized by having vitellaria consisting of slender, winding tubules but here seminal vesicle is saccular, postacetabular or largely preacetabular. While in the present specimens seminal vesicle is elongate and far anterior to acetabulum. In subfamily Jhoniophyllinae vitellaria are also tubular but seminal vesicle is postacetabular. Subfamilies diagnosis is based on Yamaguti (1970, 1971).

The present new genus does not fit exactly in any of the subfamilies of family Hemiuridae. But due to long, winding postovarian vitellaria consisting of seven tubules, present specimens are tentatively included in the subfamily Dinurinae Looss, 1907, some other characters such as body elongate with tail, broadest in the ovariovitelline zone, oral sucker well developed, directly followed by pharynx, esophagus short, ceca long, acetabulum well apart from anterior extremity. But the present new trematodes are peculiar in having an oral cone covering the oral sucker, pharynx and esophagus. This oral cone is a unique feature not present in any of the genera of family Hemiuridae. Therefore, a new genus is proposed and the name *Conica* is given referring to the oral cone and the species *Conica trilobata* indicating trilobed oral sucker.

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