

***Astioglossimetra karachiensis* n. gen., n. sp.
(Trematoda: Plagiorchiidae: Astiotrematinae)
from the Marine Turtle *Chelonia mydas* of Karachi Coast**

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Abstract: A new trematode genus *Astioglossimetra* n. gen. has been erected to accommodate an undescribed species *A. karachiensis* n. gen., n. sp., from *Chelonia mydas* of the Karachi coast. The genus name refers to its relation to the genera *Astiotrema* Looss and *Glossimetra* Mehra of the family Plagiorchiidae and subfamily Astiotrematinae.

Key Words: New genus, new species, trematodes, sea turtle, Karachi coast.

**Karaçi Sahilinde Yaşayan Deniz Kaplumbağası, *Chelonia mydas*'tan
Yeni Bir Cins ve Yeni Bir Tür, *Astioglossimetra karachiensis* n. gen., n. sp.
(Trematoda: Plagiorchiidae: Astiotrematinae)**

Özet: Karaçi sahilinde yaşayan deniz kaplumbağası bağırsağından yeni bir cins, *Astioglossimetra* n. gen. ve bu cinsde dahil olacak şekilde yeni bir tür, *Astioglossimetra karachiensis* n. gen., n. sp. tanımlanmıştır. Bu yeni cinsin ismi, Plagiorchiidae ailesi ve Astiotrematinae alt ailesine dahil *Astiotrema* Looss ve *Glossimetra* Mehra cinsleri ile akrabalığı işaret etmektedir.

Anahtar Sözcükler: Yeni cins, yeni tür, trematodlar, deniz kaplumbağası, Karaçi sahili

Introduction

Sea turtles are economically important because their armour is utilized for various purposes and their flesh is edible, being very delicious. It is a huge animal weighing about 200 lbs. It is much valued as a foodstuff in various parts of the world. It is oviparous, lays eggs outside water and is used as food.

The marine turtle *Chelonia mydas* is a natural habitant of the Karachi coast. Previously, 10 species of trematodes were described in this host from the Karachi coast (3-6). Trematode of the genus *Astiotrema* Looss (1-8) are not yet known from this turtle but species of *Glossimetra* Mehra (2-8) have been described recently (7). Present trematodes are included in the family

Plagiorchiidae and subfamily Astiotrematinae but these could not be included in any of the genera of the subfamily. Although these specimens appear to have some characteristics similar to those of the genera *Astiotrema* and *Glossimetra*, they cannot be accommodated in any of these genera because of some distinct diagnostic characteristics. Therefore, a new genus *Astioglossimetra* is proposed to accommodate the present specimens. The genus name refers to its relation with the *Astiotrema* and *Glossimetra* species. *A. karachiensis* indicates the locality of the host. A detail description of the species and genus diagnosis is given here supported with diagrams of species type including both the holotypes and paratypes.

Material and Methods

The present three trematodes were collected from the intestine of the marine turtle *Chelonia mydas* of the Karachi coast. These were examined in detail by staining and mounting permanently. The trematodes were fixed in FAA fixative (a mixture of formalin, acetic acid and 50% ethanol, 5:8:92) under slight pressure of coverslip for 24 h, and then transferred to 70% alcohol for further processing. The specimens for whole mounts were stained in alum carmine, dehydrated in graded series of alcohols, i.e. 70%, 90%, 100%, and cleared in clove oil, washed with xylol and then were mounted in Canada balsam. Diagrams were made with a camera lucida and measurements are given length by width in millimeters. Holotypes and paratypes are in the collection of the first author.

Genus Diagnosis

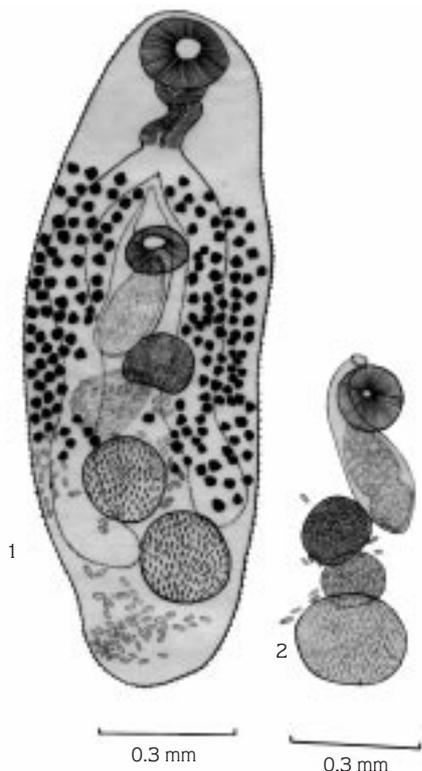
Small, delicate trematodes. Oral sucker larger than acetabulum, pharynx and esophagus prominent. Ceca not reaching beyond the posterior testis. Genital pore post

bifurcal and preacetabular. Acetabulum in the anterior one-third or anterior half of the body. Circus sac large containing prominent smooth or bipartite seminal vesicle, testes two, equal or unequal. Ovary pretesticular, rounded to flat. Seminal receptacle present, posterior to ovary. Vitellaria extending laterally from the level of cecal bifurcation to posterior testis. Uterus long reaching to posterior end of the body. Parasite of *Chelonia mydas*. Type species: *Astoglossimetra karachiensis* n. gen., n. sp., from *Chelonia mydas* of the Karachi coast.

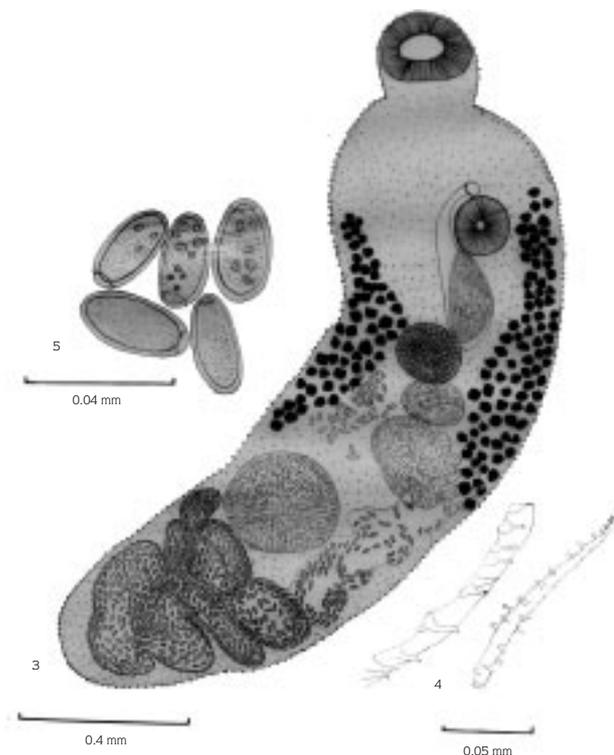
Description

Astoglossimetra karachiensis (Figs. 1-5)

- Host: *Chelonia mydas*
- Location: Intestine
- Locality: Karachi coast
- No. of specimens: 3 from a single host
- Holotype No.: T214-BFM
- Paratype Nos.: T215-T216-BFM



Astoglossimetra karachiensis n.gen., n.sp. Fig. 1. Holotype, entire specimen. Fig. 2. Cirrus sac and associated structures of a paratype.



Astoglossimetra karachiensis n.gen., n.sp. Fig. 3. A paratype, entire specimen showing reproductive organs. Fig. 4. Body spines of anterior and posterior regions. Fig. 5. Eggs.

Small, delicate, trematodes measuring 1.3-1.9 mm in length and 0.4 to 0.5 mm in width. Body covered with minute spines, more prominent in anterior region. Greatest width at the level of ovary and cirrus sac. Oral sucker larger than acetabulum measuring 0.20 to 0.25 mm in diameter. Pharynx prominent 0.10-0.12 mm in diameter. Esophagus muscular, 0.15-0.16 mm in length. Ceca large, not reaching posterior extremely, terminating anterior or at the level of posterior testis. Acetabulum in the anterior one-third or anterior half of the body measuring 0.13-0.14 mm in diameter. Sucker width ratio 1:0.55-0.6 mm. Genital pore post bifurcal and preacetabular, immediately anterior of acetabulum or immediately posterior to cecal bifurcation. Cirrus sac prominent containing an elongate seminal vesicle occupying most of the sac. Cirrus sac 0.35-0.40 mm by 0.10-0.14 mm, anterolateral to ovary and most of it posterior to acetabulum. Seminal vesicle elongate, smooth or bipartite. Testes two, oblique, equal or unequal but always larger than ovary. Anterior testis in one specimen was partly lobate while in two specimens it was rounded and smooth. Posterior testis large in one specimen. Anterior testis, 0.20-0.21 mm by 0.20-0.30 mm, posterior 0.23-0.33 mm by 0.26-0.33 mm. Ovary rounded to flattened, 0.15-0.17 mm by 0.15-0.19 mm, pretesticular, separated by the anterior testis by a prominent rounded to elongate seminal receptacle. Seminal receptacle slightly smaller, or larger than ovary and posterior to it measuring 0.13-0.17 mm by 0.13-0.19 mm. Vitellaria consist of distinct isolated flattened follicles extending laterally from the level of cecal bifurcation to anterior of posterior testis, overlapping ceca or not. Uterus long, reaching to posterior end of the body. Excretory vesicle not prominent. Eggs operculate, elongated, measuring 0.031-0.036 mm by 0.010-0.017 mm.

Discussion and Conclusion

Ten specimens of trematodes are known to occur in the marine turtle *Chelonia mydas* of the Karachi coast. These belong to the genera *Pleurogonius* (5,6), *Pronocephalus* (5), *Metacetabulum*, *Rhytidodes* (3), and *Aephiniogenes* (4). The species reported are *Pleurogonius sindhii* (5), *P. chelonii* (5), *P. karachii* (5), *P. keamarii* (5), *P. grocotti* (6), *Pronocephalus obliquus* (9), *Rhytidodes gelatinosus* (10), *Metacetabulum karachiense* (3), *Aephiniogenes senegalensis* (11) and *Glossimetra lobeta* (7). Present is the eleventh specie of trmeatodes from *Chelonia mydas* of the Karachi coast belonging to a new genus *Astioglossimetra*. No species of *Asteotrema* is known from *Chelonia mydas* but a species of *Glossimetra* has been recently described from the same host of the Karachi coast (7).

Present new genus *Astioglossimetra* is related to the genera *Astiotrema* and *Glossimetra* as far as position of genital opening and location of ovary and testes is concerned, which is postbifurcal and preacetabular (8). However, the new gneus is different in having short extension of the vitellaria, which is from the intestinal bifurcation to only anterior testis, and short cecae, which reach only behind the anterior testis, while in the two related genera as mentioned above the vitellaria and cecae both extend beyond the posterior testis or to the posterior end of the body. The extension of vitellaria and length of cecae are the two important diagnostic features to separate various genera. In the light of differences noted among the present specimens and the genera *Astiotrema* and *Glossimetra* it is concluded that the present specimens belong to an undescribed genus for which the name *Astioglossimetra* is preposed. The name of the genus and species refers to its relation to the genera *Astiotrema* and *Glossimetra* and locality of the host respectively. Species of the genus *Astiotrema* are not known from the marine turtle *Chelonia mydas*. Most of the species are known from freshwater tortoises. Similarly, *Glossimetra* species are also known from freshwater tortoises but this turtle appears to be a favorable host for trematodes.

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