

## Lecanicephalidea Cestode Larvae Parasite in *Scomberoides cammersoniaus* Fish, Arabian Gulf

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**Abstract** Present investigation on infection of family Lecanicephalidea cestode infestation of marine fishes of Khor –Abdulla North west Arabian Gulf through February-July 2013, revealed the presence of two species of Lecanicephalidea larvae from *Scomberoides cammersoniaus*. The two species are represented as a new locality recorded parasite in Arabian Gulf fishes. Fish were identified according to (Kuronuma and Abe, 1986). The parasites were identified according to Joanna J. Cielohai & Kirsten, 2013; Yamaguti (1959); Palm (2000); William and Williams, (1996) and Germany museum by Dr Harry Palm. And drawing was prepared by Camera Lucida.

**Keywords** Cestode parasite; Khor–Abdulla North West Arabian Gulf; *Scomberoides cammersoniaus*

### Introduction

Order Lecanicephalidea Wardle & McLeod, 1952 until recently was a poorly known taxon, consisting at different times of a diversity of genera exhibiting a wide array of morphological features. Butler's (1987) comprehensive review of the history of this group did much to enhance understanding of this difficult taxon. Euzet (1994) provided a detailed of the group with a critical assessment of the taxonomic status of its genera and he recognized four families within this order: Polypocephalidae Meggitt, 1924, Tetragonocephalidae Yamaguti, 1959, Lecanicephalidae Braun, 1900 and the new family Anteroporidae.

According to Jensen (2005) Morphology of the family In general, lecanicephalideans are characterized by a scolex possessing 4 acetabula that are either sucker-like or bothridiate in form, an apical structure, and a vagina opening into the genital atrium posterior to the cirrus sac. Apical structure morphology is particularly diverse.

Diversity: Currently, 65 species are considered valid and another 52 species are considered to be species inquire. These species are attributed to 22 genera, 8 of which are considered to be genera inquirendae.

At this time, familial boundaries are poorly understood and unstable.

Phylogenetic relationships: Lecanicephalideans are likely to be paraphyletic; close relationships to Echeneibothrium and Pseudanthobothrium (Tetraphyllidea) and the Proteocephalidea have been suggested. Phylogenetic relationships within the Lecanicephalidea are poorly understood.

Definitive hosts: The lecanicephalideans parasitize elasmobranchs (sharks and rays) as adults. They are primarily parasites of rays; however a few records from sharks do exist. Forty-seven species of rays in 12 families have been reported as hosts for lecanicephalideans, including stingrays, eagle rays, numbfishes, sawfishes, guitarfishes, and wedgefishes. In addition, lecanicephalideans have been reported from 6 species of sharks in 5 families, namely Carcharhinidae, Hemiscylliidae, Megachasmidae, Squatinidae, and Stegostomatidae.

Site in definitive host: Spiral intestine.

Geographic distribution: Lecanicephalideans are distributed in tropical and subtropical waters. The greatest diversity of lecanicephalideans appears to occur in the Indo-Pacific region, specifically the waters around India, Sri Lanka, Borneo, and Northern Australia.

Life-cycles: While no complete life-cycle is currently known for any lecanicephalidean species, larva attributed to the Lecanicephalidea have been reported from a diversity of intermediate host groups, mainly molluscs and crustaceans, and a few teleosts; members of this order likely possess 2 and/or 3 hosts in their life-cycles.

### 1 Materials and Methods

Monthly fish samples were collected from south of Iraq during the years 2013. A total of 30 fish specimens *Scomberoides cammmersoniaus* where collecting from Khor –Abdulla North-west Arabian Gulf south of Iraq. These collected fish were kept on ice and brought to the laboratory . Fishes were examined only for internal parasites, each fish was opened and the intestines were fully examined for parasites. The abdominal cavity of each fish was cut open and the intestine was separated from the other visceral organs and placed in a Petri-dish containing

physiological saline and the helminthes were found with loop. For each host specimen, the spiral intestine was removed, opened with a longitudinal incision, fixed in 10% formalin buffered with seawater, and transferred to 70% ethanol for storage. Cestodes encountered in the spiral intestines were abundant. Line drawings were made using a drawing tube attached to a Zeiss Plus compound microscope. Measurements are given in micrometers  $\mu\text{m}$ . The specimens where sent to Dr Palm for identification.

### 2 Result and Discussion

As the result of investigation of 30 fish specimens of *Scomberoides cammmersoniaus* where collecting from Khor –Abdulla North West Arabian Gulf south of Iraq, during the years 2013. 10 larvae plerociecoide of family species cestode parasite are isolated.

Family Lecanicephalidea Guns *Stoibocephalum*  
 Joanna J.Cielochai & Kirsten Jensen, 2013  
*Stoibocephalum* sp (Figure 1).

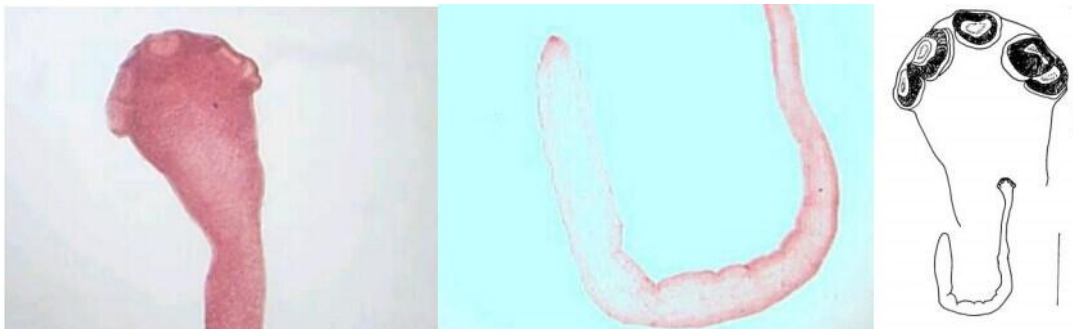


Figure 1 *Stoibocephalum* sp1 scale bar of head 0.05 mm and total length 0.5 mm

Description: Based on 2 whole larvae; longitudinal larvae 1.7–2 (1.8) mm long, Scolex (0.225 -0.230) 0.227 long by 0.257–0.262 (0.259) wide, consisting of scolex with 4 acetabula, apical of scolex, and apical organ cephalic peduncle absent. Acetabula in form of

suckers, 0.0857 in diameter. Apical modification of scolex proper bearing apical organ. Apical organ and Acetabula in form of thick muscular pad.

*Stoibocephalum* sp2 (Figure 2).



Figure 2 *Stoibocephalum* sp2 scale bar of head 0.05 and total length 0.5 mm

Description: Based on 2 whole larvae; longitudinal larvae 1.08–1.2 (1.5) mm long. Scolex (0.357 -0.396) 0.376 long by 0.277–0.217 (0.962) wide, consisting of scolex with 4 acetabula 0.119 in range, apical of scolex 0.047-0.068(0.0575) long and 0.095-0.125 (0.11) wide, and apical organ cephalic peduncle absent. Acetabula in form of suckers, 0.119mm in diameter. Apical modification of scolex proper bearing apical organ, apical organ and Acetabula in form of thick muscular pad.

The taxonomic status of the lecanicephalidea has varied from that of an independent order of Eucestodes (Wardle & McLeod, 1952; Schmidt, 1986) to membership in one or more of the other Eucestode orders (Braun, 1900; Meggitt, 1924; Poche, 1926; Woodland, 1927; Fuhrmann, 1931; Euzet, 1956; Spassky, 1958; Euzet, 1959; Joyeux & Baer, 1961; Butler, 1987). Poche (1926) recognised two families of lecanicephalideans, the Lecanicephalidae and the Polypocephalidae, He considered both families to belong in the order Taeniidea, along with the Onchobothriidae Braun, 1900, Phyllobothriidae Braun, 1900, Proteocephalidae La Rue, 1911 and Monticelliidae La Rue, 1911.

Woodland (1927) considered most of the well-studied lecanicephalidean taxa to belong to the tetracyllidean family Phyllobothriidae, but he suggested that *Adelobothrium aetiobatidis* Shipley, 1900 and *Tylocephalum marsupium* Linton, 1911 might be more appropriately placed within the Trypanorhyncha.

Spassky (1958) recognised the superfamily Lecanicephaloidea in the suborder Phyllobothriata in the order Tetracyllidea. Freeman (1973) suggested the lecanicephalideans had affinities with the tetracyllideans and the diphyllideans. Butler (1987) considered the lecanicephalideans to be a family within the Tetracyllidea. New genus and species of lecanicephalidean cestode, *Stoibocephalum arafurensense* is described from the shark ray, *Rhina ancylostoma* Bloch & Schneider, off northern Australia. *Stoibocephalum* sp1 are described in this study most closely resembles Cielohai & Kirsten, 2013 specimens

and *Stoibocephalum* sp2 but differs from that genus in scolex shape. This is the first recording parasite in Arabian Gulf and the presence of two species of Lecanicephalidea larvae from *Scomberoides cammersoniaus*. The two species are represented as a new locality recorded parasite in Arabian Gulf fishes

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