

Sprostoniella teria Sp. Nov. (Monogenea: Capsalidae Baird, 1853: Trochopodinae) Parasite of *Platax teira*, from Iraqi Marine Water, Arab Gulf

Majid Abdul Aziz Bannai and Essa T. Muhammad

Aquaculture and Marine Fisheries, Marine Science Center, University of Basra, Iraq

Abstract

During the investigation of five species of *Platax teira* where collecting from Arabian Gulf. One parasite was detected *Sprostoniella* sp. Capsalidae Baird, 1853 from gill filaments. Results give an indication that the parasite are consider as new species in Iraqi marine and *Platax teira* fishes as anew host in words and new geographical distribution.

Keywords: Monogenea; *Sprostoniella teria*; Monogenea; Capsalidae Baird; Trochopodinae; *Platax teira*

Introduction

The Monogenea is a class of Platyhelminthes parasitic mostly on external surfaces and gills of freshwater and marine fishes. The Capsalidae are monogeneans parasitizing 'skin', fins and gills of marine fishes, approximately 200 Capsalidae species are placed in nine subfamilies and 44–46 genera, some of which are well known (*Benedenia*, *Capsala*, *Entobdella*, *Neobenedenia*).

Presently, there are about 200 described capsalid species in nine subfamilies and 44–46 genera. The host range comprises elasmobranchs [1] and teleosts, including primitive sturgeons [2,3]. Because of their direct life cycle, some monogeneans can affect fish in captivity [4] and there are increasing reports that some capsalids adversely affect fish in aquaculture and are even responsible for epizootic events [3].

The Capsalidae Baird, 1853 (Monogenea, Monopisthocotylea) constitutes a large taxon of seven subfamilies, including the Encotyllabinae Monticelli, 1892, Capsalinae Baird, 1853, Benedeniinae Johnston, 1931, Nitzschiinae Johnston, 1931, Trochopodinae Price, 1936, Entobdellinae Bychowsky, 1957 and Interniloculinae Suriano and Beverley-Burton, (Figure 1) [5].

According to Kritsky and Fennessy [6] the family of Capsalidae includes more than 40 genera of about 200 species and Capsalids parasites a wide host spectrum of marine fishes, including elasmobranchs of the orders Squaliformes, Rajiformes and Lamniformes as well as actinopterygians of the orders Acipenseriformes, Anguilliformes, Perciformes, Tetraodontiformes, Zeiformes, Scorpaeniformes and Pleuronectiformes

The Capsalinae is a subfamily of 60 monogenean parasite species which live primarily on the skin and gills of highly-prized game fish. Members of the Capsalinae can be distinguished from other capsalids by the presence of a septate haptor, a single pair of haptoral accessory sclerites and multiple testes [3]. Diagnostic characters of this genus are the two neighboring groups of testes, and the structure of loculi of the Haptor, these characters were confirmed by Ergorova [7] in her revision of Trochopodinae.

The Capsalidae fauna of Arabian Gulf and Iraq marine water is reported and discussed and a new host and locality records presented. New host and locality records and a description are given of Monogenea of Arabian Gulf fishes by Kardousha [8], Descriptions of three *Capsala*

spp. (Capsalidae) including *Capsala naffari* n. sp. infecting mackerel tuna *Euthynnus affinis* from coasts of Emirates. Three species of the genus *Capsala* including *Capsala naffari* n. sp., *C. neothunni* [2] and *C. nozawae* (Goto, 1894) are recorded and described from the buccal cavity of mackerel tuna *Euthynnus affinis* caught from Emirate coasts. *Capsala naffari* can be differentiated by its lateral spiniform teeth, which extend posteriorly, small measurements compared with the closely resembled *C. gotoi* and relatively large testes.

Material and Methods

Monthly fish samples were collected from Khor Abdullah, north west of the Arabian Gulf, from March of the year 2014. A Total of five fish specimens were collected. These fishes were kept in ice box and brought to the laboratory. The methods and techniques used for collection, relaxation, fixation, staining and mounting of helminthes are basically those described by Roberts. Fishes measured 40–46.0 cm of total length, and weighted 5 kg. All the Monogenea parasites were fixed in A.F.A., preserved in ethanol 70%GL, stained with Gomori's trichrome, and mounted in Canada balsam. Measurements were made in micrometers. Parasites identification according Yamaguti, and Ian D. Whittington) [2,3]. Drawings were prepared by Camera Lucida.

Result and Discussion

During a parasitological survey of marine fishes from the coastal zone of the Iraqi marine water. *Sprostoniella teria*. was found on the gill filaments of *Platax teira* specimens. *Sprostoniella teria* (Figure 2).

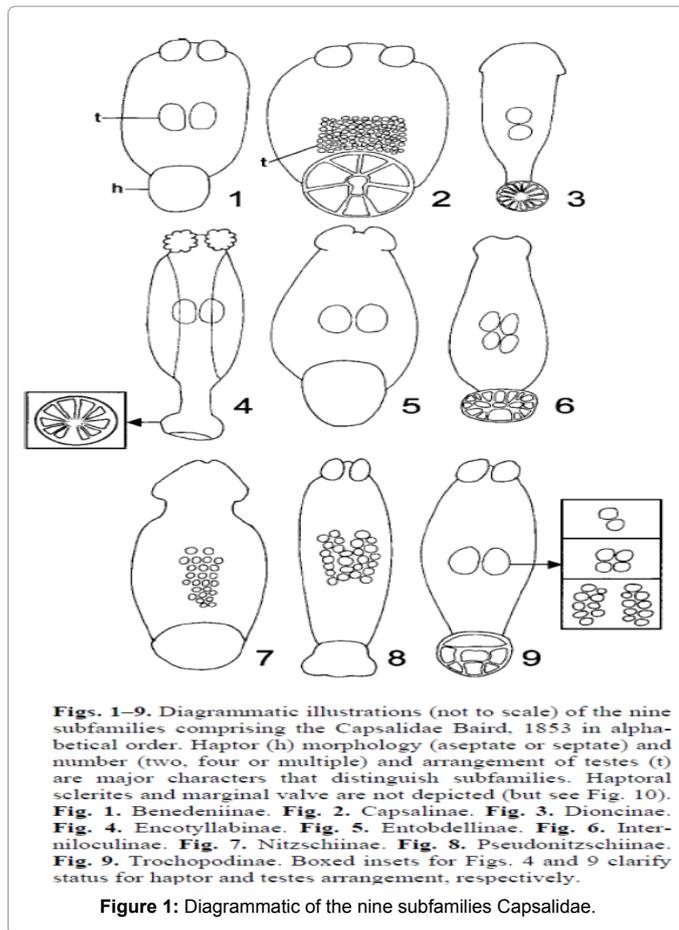
Description (based on one whole-mount): Body 4.047 mm in length, elliptical width 2.5 mm in tests aria. Four eyes with trapezoidal arrangement. Haptor 1.61 × 1.3 mm in diameter, with 11 septa, not bifid, and incomplete; central locale absent. One pairs of anchors.

*Corresponding author: Majid Abdul Aziz Bannai, Aquaculture and Marine Fisheries, Marine Science Center, University of Basra, Iraq, Tel: 964-77-12477321; E-mail: majidb65@yahoo.com

Received January 21, 2014; Accepted April 22, 2015; Published April 25, 2015

Citation: Bannai MAA, Muhammad ET (2015) *Sprostoniella teria* Sp. Nov. (Monogenea: Capsalidae Baird, 1853: Trochopodinae) Parasite of *Platax teira*, from Iraqi Marine Water, Arab Gulf. Fish Aquac J 6: 127. doi:10.4172/2150-3508.1000127

Copyright: © 2015 Bannai MAA, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.



Buccal organs 0.28 mm long, 0.527 wide; pharynx 0.19 long, 0.178 wide. Intestinal ceca not confluent posteriorly. Testes, 1.05 long, 0.54 wide, in two groups, each group with 9 testes. Posterior to pharynx genital atrium opened to left of pharynx. Ovary is oval, 0.21 mm in diameter, pretesticular; short uterus; vagina long, one seminal receptacle; vitellaria limited in trunk.

The validity of genera and species in the Capsalinae and Trochopodinae are now most in need of extensive reappraisal, these two large subfamilies each comprise approximately 50 species and together account for more than 50% of all described capsalid taxa. Egorova [9] and LamotheArgumedo [10] disagree about the number of capsaline genera which impacts on the composition of other genera. The Trochopodinae, almost exclusively parasites from gills of perciform teleosts, are perhaps the most morphologically diverse subfamily with regard to: number of haptor loculi; arrangement of anterior attachment apparatus; number of testes (two arranged either juxtaposed *Megalocotyloides* or in tandem *Macrophyllida* four *Trilobiodiscus* or multiple in two groups. *Sprostoniella* Egorova [4]. The large number of genera containing few species reflects morphological diversity in trochopodines: all but three of the 17 genera contain only one to three species

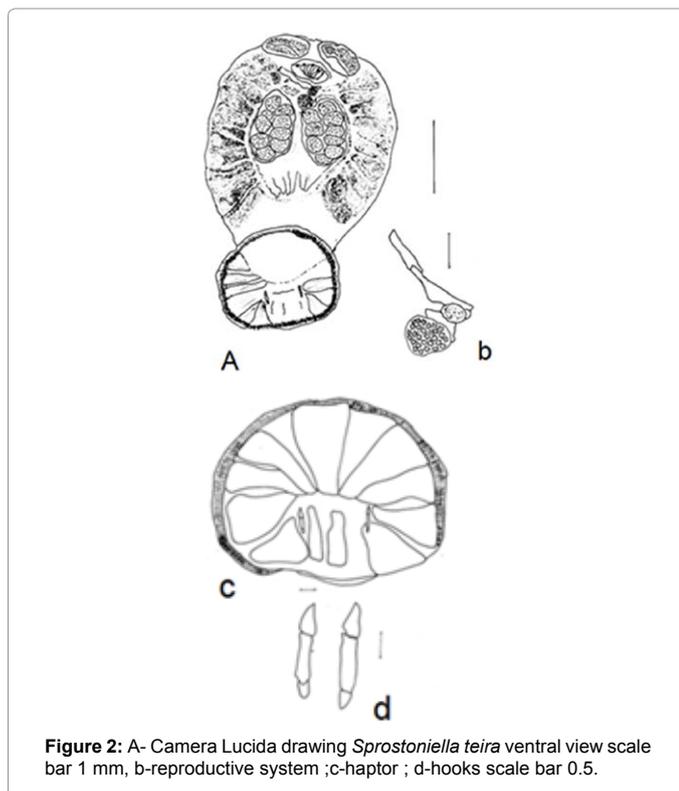
Diagnostic characters of this genus are the two neighboring groups of testes, and the structure of loculi of the haptor. These characters were confirmed by Egorova [4] in her revision of Trochopodinae.

The Genus consist of three species of *Sprostoniella*, *S. lamothei* Pérez-Ponce de León & Mendoza-Garfias, [11-14]; *S. multitestis* [11] established *Sprostoniella* with the type species *S. multitestis* parasitic on *Platax pinnatus* (L.). *Sprostoniella micrancyra* as described as new species are differ from *S. multitestis* by the arrangement of septa (with 17 septa, two of them bifid and two incomplete whereas 17 septa, two of them trifold in *S. multitestis*). Moreover, *Sprostoniella micrancyra* showed two central loculi, while *S. multitestis* only one, in *Sprostoniella micrancyra* the first pair of anchors is small and poorly developed, while in *S. multitestis* is well developed and strong [15].

The specimens described in this study differ from the two types above by the following: 11 septa; not bifid, incomplete and central locale absent, one pairs of anchors; Testes, in two groups, each group with 9 testes. So we consider this as a new species and *Platax teira* represents a new host and new geographical dist.

References

- Whittington ID, Chisholm LA (2003) Diversity of Monogenea from Chondrichthyes: do monogeneans fear sharks? In: Combes C, Jourdan J (eds), *Taxonomie, Écologie et Évolution des Métazoaires Parasites*. (Livre hommage à Louis Euzet). Tome 2. PUP Perpignan, France: 339-363.
- Yamaguti S (1968) *Monogenetic Trematodes of Hawaiian Fishes*. University of Hawaii Press, Honolulu. 287
- Ian D, Whittington (2004) The Capsalidae (Monogenea: Monopisthocotylea): a review of diversity, classification and phylogeny with a note about species complexes, *Folia parasitologica* 51: 109-122
- Chisholm LA, Whittington ID, Fiscer ABP (2004) A review of *Dendromonocotyle* (Monogenea: Monocotylidae) from the skin of stingrays and their control in public aquaria. *Folia Parasitol* 51: 123-130.
- Egorova TP (1999) Systematics of the subfamily Entobdellinae (Monogeneoidea: Capsalidae). *Parazitologiya* 33: 420-425.
- Boeger WA, Kritsky DC (2001) Phylogenetic relationships of the Monogeneoidea. In: Littlewood DTJ, Bray RA (eds), *Interrelationships of the Platyhelminthes*. Taylor and Francis, London and New York: 92-102.
- Egorova TP (1994) A taxonomic review of the subfamily Trochopodinae (Monogeneoidea: Capsalidae). *Parazitologiya* 28: 81-91.



8. Kardousha MM (2002) Monogenea of Arabian Gulf fishes.1. Descriptions of three Capsala spp. (Capsalidae) including Capsala naffari n. sp. infecting mackerel tuna Euthynnus affinis from coasts of Emirates. Parasitology International 51: 327-335.
9. Egorova TP (1989) A taxonomic analysis of the subfamily Capsalinae (Monogenoidea; Capsalidae). In: Lebedev BI (ed.), Parazitologicheskie issledovaniya: sbornik nauchnykh trudov. Dal'nevostochnoe otdelenie. Akademiya Nauk SSSR, Vladivostok: 46-54.
10. Lamothe -Argumedo R (1997) Nuevo arreglo taxonómico de la subfamilia Capsalinae (Monogenea: Capsalinae), clave para los géneros y dos combinaciones nuevas. An. Inst. Biol. Univ. Nac. Autón. Mex. (Zool.) 68: 207-223.
11. Perez Ponce de Leon GP, Medndoza -Garfias B (2000) A new species of Sprostoniella Bychowsky and Nagibina, 1967 (Monogenea: Capsalidae) from Chaetodipterus zonatus (Osteichthyes: Ephippidae) in Chamela Bay, Mexico. J. Parasitol. 86: 811-814.
12. Bychowsky B, Nagibina L (1967) New Capsalidae (Monogenoidea) from Pacific fishes. Parasitologiya 1: 521-527.
13. Cezar A, JL Luque, JFR Amato (1999) Two new species of Monogenea (Platyhelminthes: Cercomeridea) parasitic on Chaetodipterus faber (Teleostei: Ephippidae) from the Brazilian coastal zone, Revista. biological tropical.
14. Whittington ID, Deveney MR, Morgan JAT, Chisholm LA, Adlard RD (2004) A preliminary phylogenetic analysis of the Capsalidae (Platyhelminthes: Monogenea: Monopisthocotylea) inferred from large subunit rDNA sequences. Parasitology 128: 511-519.
15. Krtskyd DC, Fennessy CJ (1999) Calicobenedenia polyprioni n. gen., n. sp. (Monogenoidea: Capsalidae) from the external surfaces of wreckfish, Polyprion americanus (Teleostei: Polyprionidae), in the North Atlantic. J. Parasitol 85: 192-195.

Citation: Bannai MAA, Muhammad ET (2015) *Sprostoniella teria* Sp. Nov. (Monogenea: Capsalidae Baird, 1853: Trochopodinae) Parasite of *Platax teira*, from Iraqi Marine Water, Arab Gulf. Fish Aquac J 6: 127. doi:[10.4172/2150-3508.1000127](https://doi.org/10.4172/2150-3508.1000127)

This article was originally published in a special issue, **Diversity of Fish Species** handled by Editor(s). Dr. Mitchel Abaracoso Andrada, Philippine Fisheries Development Authority, Philippines

Submit your next manuscript and get advantages of OMICS Group submissions

Unique features:

- User friendly/feasible website-translation of your paper to 50 world's leading languages
- Audio Version of published paper
- Digital articles to share and explore

Special features:

- 400 Open Access Journals
- 30,000 editorial team
- 21 days rapid review process
- Quality and quick editorial, review and publication processing
- Indexing at PubMed (partial), Scopus, EBSCO, Index Copernicus and Google Scholar etc
- Sharing Option: Social Networking Enabled
- Authors, Reviewers and Editors rewarded with online Scientific Credits
- Better discount for your subsequent articles

Submit your manuscript at: <http://www.omicsonline.org/submission>