

Rapid Communication

The first Indo-West Pacific rock shrimp (Crustacea, Decapoda, Sicyoniidae) in the Mediterranean Sea

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Received: 26 November 2015 / Accepted: 4 December 2015 / Published online: 5 December 2015

Handling editor: Vadim Panov

Abstract

Sicyonia lancifer (Olivier, 1811), a widely distributed Indo-West Pacific rock shrimp, was recently collected off the Mediterranean coasts of Turkey and Israel. This is the first record of the species in the Mediterranean Sea. The species is illustrated, and differentiated from its native Mediterranean congener, *S. carinata* (Brünnich, 1768).

Key words: *Sicyonia lancifer*, Erythraean alien, Mediterranean, Suez Canal

Introduction

The 52 species currently comprising *Sicyonia* H. Milne Edwards, 1830 (De Grave and Fransen 2011), the only genus in Sicyoniidae Ortmann, 1898, occur in tropical, subtropical, and temperate waters. Of that number, one species is recorded in the Mediterranean, *S. carinata* (Brünnich, 1768) (d'Udekem d'Acoz 1999), and 31 occur in the Indo-West Pacific Ocean (Crosnier 2003).

Of the 83 alien decapod crustaceans known from the Mediterranean Sea (Galil et al. 2015b), 15 are penaeoids. *Sicyonia lancifer* (Olivier, 1811) is the 16th non-native penaeoid species and is the first sicyoniid to have entered the Mediterranean through the Suez Canal.

Materials and methods

Specimens of *Sicyonia lancifer* were collected off the Mediterranean coast of Turkey during surveys supported by the Scientific Research Projects Coordination Unit of Istanbul University. These surveys used a commercial bottom trawler (25 m length) and the net had a 44-mm mesh in

the cod end. An additional specimen of *S. lancifer* was collected off the Mediterranean coast of Israel during a survey of the soft bottom epifauna conducted within the framework of the national monitoring program. This survey used a similar-sized commercial bottom trawler and the net had a 20-mm mesh in the cod end. The specimens are deposited in the Gökçeada Marine Research Department, Istanbul University, Turkey (GMRD), and Steinhardt National Collections of Natural History, Tel Aviv University, Israel (TAU).

Results

SYSTEMATICS

Penaeoidea Rafinesque, 1815

Sicyoniidae Ortmann, 1898

***Sicyonia* H. Milne Edwards, 1830**

Sicyonia lancifer (Olivier, 1811)

(Figures 1A-B, 2)

Palaemon lancifer Olivier, 1811: 664, pl. 8.

Sicyonia lancifer H. Milne Edwards, 1830: 341; Paul'son, 1875: 124, pl. 18, fig. 2-2b.



Figure 1. *Sicyonia lancifer* (Olivier, 1811), Israel - off Ashdod, June 2015, photo by Oz Rittner; A, lateral view; B, dorsal view.



Figure 2. *Sicyonia lancifer* (Olivier, 1811), Israel - off Ashdod, June 2015, photo by Oz Rittner; Thelycum.

Material examined. – Turkey. Off Konacık (36°22'49.38"N 35°44'16.22"E), depth 110 m, 10 March 2015: one male, carapace length 9 mm (GMRD); same location, 1 female, carapace length 10.2 mm (TAU AR29534). Off Samandağ

(36°3'58.70"N, 35°51'46.11"E E), depth 90 m, 25 June 2015: one male, carapace length 15 mm; one female, carapace length 16 mm (GMRD).

Israel. Off Ashdod (31°50'6.9"N, 34°36'49"E), depth 60 m, 16 June 2015: one female, carapace length 14.6 mm (TAU AR29533).

Description. – The specimens examined agree with Crosnier's (2003: 218–220) detailed description (Figs 1A–B, 2).

Geographic and bathymetric ranges. – In the Indo-West Pacific *S. lancifer* is known from the Red Sea, Gulf of Aden, Seychelles and Madagascar to Australia, New Caledonia, Fiji and Japan; from the intertidal to 250–350 m depths (Crosnier 2003).

Remarks. – *Sicyonia lancifer* is readily distinguished from its Eastern Atlantic-Mediterranean congener *S. carinata* in possessing five unequal teeth on the postrostral carina (vs. three in *S. carinata*); pleon with distinctly grooved dorsal carinae (vs. rounded carinae in *S. carinata*); and deeply sculpted pleura with spinose posterior margins (vs. pleura obscurely sculpted with smooth posterior margins in *S. carinata*).

While *S. carinata*, a nocturnal species (García Raso et al. 2006), is confined to shallow waters on fine sand and muddy sediments with seagrasses and seaweeds (López De La Rosa et al. 2006; Schaffmeister et al. 2006), *S. lancifer* has been recorded from the intertidal to the upper slope and is common in deeper waters: "... l'espèce semble surtout fréquenter les fonds inférieurs à une centaine de mètres." (Crosnier 2003: 218).

Earlier Erythraean alien colonizers were mostly confined to the shallow shelf. In recent years, however, non-native species inhabiting deeper waters have been recorded: the spiny blaasop *Tylerius spinosissimus* (Regan, 1908) was collected at 90 m depth (Corsini et al. 2005) and at 120–140 m (Golani et al. 2011); the eel goby *Trypauchen vagina* (Bloch and Schneider, 1801) at 90 m (Salameh et al. 2010); the nakedband gaper *Champsodon nudivittis* (Ogilby, 1895) at 100 m (Goren et al. 2011) and 150 m (Kalogirou and Corsini-Foka 2012); and Randall's threadfin bream *Nemipterus randalli* Russel, 1986 reaches depths of 150 m (Stern et al. 2014). The discovery of these species becoming established in deep waters suggests that the deepening of the Suez Canal facilitates the passage of deeper-living species. The Mediterranean records of *S. lancifer*, at depths ranging from 60 to 110 m, marks another thermophilic alien added to the deep-water fauna of the Mediterranean Sea.

Repeatedly deepened and widened, the Suez Canal currently is 24 m deep, and the Suez Canal Authority is already evaluating the feasibility of further increase in depth (<http://www.suezcanal.gov.eg>, viewed October 5, 2015). The implications of a deeper canal require careful evaluation. Does increasing the supply of deeper living propagules into the Mediterranean account for the observed long term changes in the Erythraean (Lessepsian) invasions? The Suez Canal is the primary corridor for marine invasions into the Mediterranean and accounts for 2/3 of the alien species recorded in the sea. Enlargement of the Canal has resulted in increased numbers of Red Sea aliens with a range of injurious effects on the biological diversity, and ecosystem structure and functioning of the Mediterranean Sea (Galil et al. 2015a).

Acknowledgements

Oz Rittner, The Steinhardt Museum of Natural History and Israel National Center for Biodiversity Studies, kindly photographed the specimen. We thank the reviewers for their helpful and timely comments. Partial funding was received by BSG from the European Community's Seventh Framework Programme (FP7/2007-2013) under Grant Agreement No. 287844 for the project "Towards COast to COast NETWORKS of marine protected areas (from the shore to the high and deep sea), coupled with sea-based wind energy potential" (COCONET).

Note: after release of corrected proof of this article, Prof. Mehmet Baki Yokes of Halic University, İstanbul, reported on December 6, 2015 that 4 specimens of *Sicyonia lancifer* have been collected near Mersin, at depths of 52 and 70 m, since April 2015, and are deposited in his collection.

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