



-SHORT COMMUNICATION-

First Record Marbled Shrimp *Saron marmoratus* (Olivier, 1811) from Turkish Marine Waters

Deniz Erguden¹, Necdet Uygur², Onur Ayan², Mevlüt Gürlek¹, Ali Uyan¹, Serpil Karan¹, Servet A. Dođdu¹, Cemal Turan^{1*}

¹Molecular Ecology and Fisheries Genetic Laboratory, Faculty of Marine Sciences and Technology, Iskenderun Technical University, 31220 Iskenderun, Hatay, Turkey.

²Maritime Vocational School, Iskenderun Technical University, Iskenderun, Hatay, Turkey.

Abstract

During the Scuba survey at the evlik coast area of the southeastern side of the Iskenderun Bay on February 3, 2018. One male specimen of marbled shrimp *Saron marmoratus* was collected by scoop net at a depth of 15 m. With the present study, *S. marmoratus* is the first time reported from Turkish marine waters. *S. marmoratus* probably be entered the Mediterranean through the Suez Canal.

Keywords:

Indo pasific shrimp, Hippolytidae, New record, Iskenderun Bay, Mediterranean Sea

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Introduction

The genus *Saron* is represented by a single species in the Mediterranean Sea. *Saron marmoratus* (Olivier, 1811) known as the marble shrimp is the member of the family Hippolytidae. The marble shrimp, *Saron marmoratus*, is widely distributed in the Indo-Pacific, from the Red Sea through the Persian Gulf and eastern Africa to Australia, and Hawaii (Sheibani-Tezerji & Sari, 2007; De Grave & Fransen, 2011).

Saron marmoratus is occasionally seen on reefs but it is more frequently found among coral and coral rubble, in the infralittoral to sublittoral zone. It is normally found in the Indo-

* Corresponding Author: Cemal Turan, e-mail: cemal.turan@iste.edu.tr

Pacific. However, marbled shrimps are highly demanded and good priced in the marine aquarium trade due to its easy care.

One specimen of *S. marmoratus* was recorded of the coast of Israel (Naharya) in 2013 (Rothman et al., 2013), and then two specimens were sighted in September and November 2014 from the Lebanon coast (Bitar, 2015) which indicate that the entrance of the pathway of *S. marmoratus* to the Mediterranean is probably by lessepsian migration through the Suez Canal from the Red Sea.

Although *S. marmoratus* has been recorded from Israel and Lebanon Coasts in the Mediterranean Sea, up to now, no specimens of this species has not been reported from the Turkish Marine waters, the Eastern Mediterranean. The present study is reported new record of marble shrimp *S. marmoratus* in Turkish Marine waters.

Materials and Methods

One male specimen of *Saron marmoratus* (Olivier, 1811) was sighted from the Çevlik coast area of southeastern side of Iskenderun Bay on February 3, 2018 during the scuba diving survey (35° 56' 57.60" N, 35° 55' 12.91" E). One marble shrimp specimen was collected by scoop net at a depth 15 m, entry the coral rock and next to the long-spined sea urchin, *Diatema setosum* (Fig. 1).

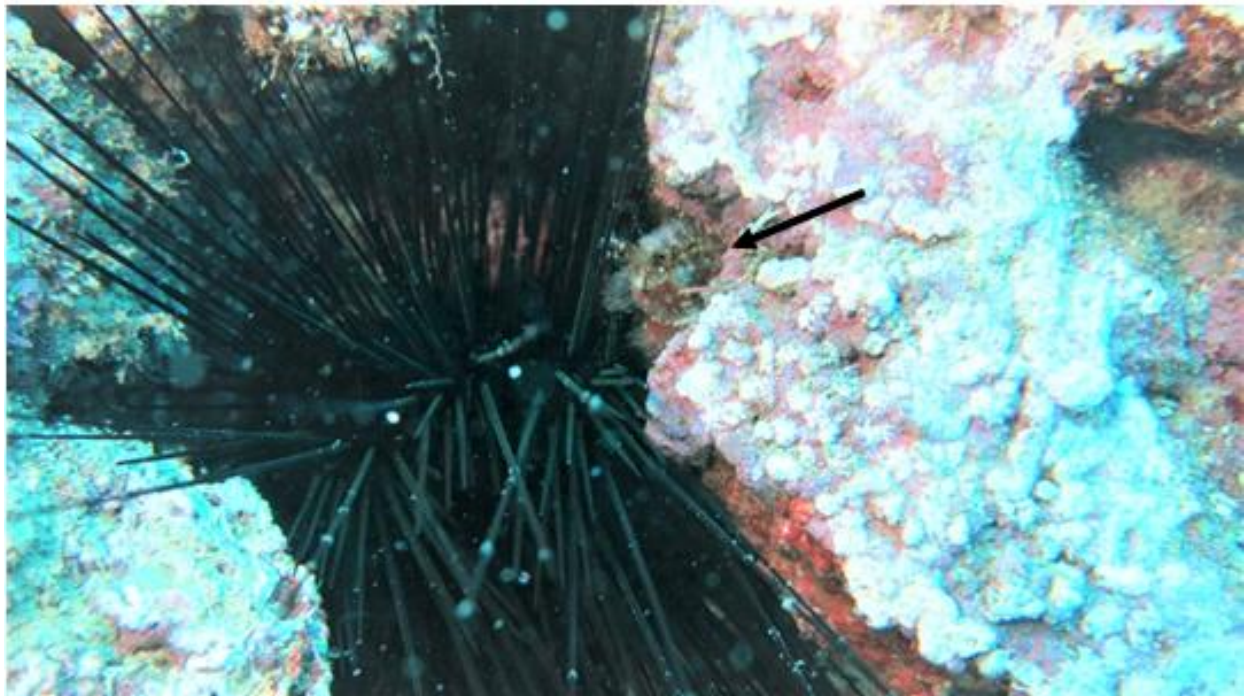


Figure 1. *Saron marmoratus*: at the entry of cave (shown by arrow) (Cevlik, 3 February 2018), and on the right side of the long-spined sea urchin *Diatema setosum*.

The temperature of the sampling area was measured as 19.2 °C. After diving, the specimen was carefully transferred to laboratory and preserved in 5 % ethanol. Morphometric measurements of the specimen was made to the nearest 0.01 mm using digital caliper and

photographed (Fig. 2). Meristic measurements and diagnostic features were determined according to previous studies (Rothman et al., 2013; Poupin & Juncker, 2010; Baby et al. 2016).



Figure 2. *Saron marmoratus* (Olivier, 1811) collected from Çevlik coast, eastern Mediterranean, Turkey (Photo: Necdet Uygur)

This specimen was deposited in the Museum of the Faculty of Marine Sciences and Technology, Iskenderun Technical University.

Results

The total length, carapace length and weight of male specimen were 59.1 mm, 22.2 mm and 3.0 g., respectively. It had two pair of long thin antennae and rostrum was slightly longer than carapace and strongly recurved, it had 5 spines on its dorsal margin, followed by 3 spines on the carapace, and there were 7 long spines on the ventral margin of the carapace. Abdomen was humped and little longer than carapace. The eyes were pear shaped. Antennular peduncle without erect spine on 3rd segment. Third maxilliped was longer than the first pereopod. The second pereopod was slender and the cutting edge of the dactylus was smooth without serration; the carpus was subdivided into 13 joints on either side. The third, fourth and fifth pereopods were equally armed with two well-visible spines on the subterminal portion of the merus. Two spines on the merus of third and fourth pereopods and one on the merus of fifth pereopod. Distinguishing meristic and morphometric characteristics of the specimen and comparison with other previous reports are given in Table 1.

Table 1. Measurements of *S. marmoratus* caught in the Iskenderun Bay, the Eastern Mediterranean Sea of Turkey and comparison of morphometric and diagnostic characters between different findings.

Characters	Present study	Sheibani-Tezerji and Sari (2007)		Baby et al. (2016)		
Location	Iskenderun Bay, Turkey	Makran Coast, Iran		Lakshadweep Archipelago, India		
Number of specimen	1	3		2		
Sex	Male	Female	Juvenile	Juvenile	Juvenile	Juvenile
Total length (mm)	59.10	62.23	27.41	29.46	34.30	35.24
Carapace length (mm)	22.20	30.74	10.90	12.33	6.35	7.23
Abdomen (mm)	11.38	-	-	-	-	6.79
Rostrum length (mm)	15.69	-	-	-	-	9.41
Eye diameter	3.20	-	-	-	-	1.68
Rostral formula upper rostral teeth on the carapace (UC) + upper rostral teeth (UR) + lower rostral teeth (LR)	3+5+7	4+3+6	4+44+6	4+44+ 6	44+3+6	44+3+6
Third maxilliped length (mm)	29.50	27.20	8.7	8.97	14.67	5.02
First pereopod length (mm)	25.70	23.98	7.48	7.90	13.86	14.12
Second pereopod carpus articles	13	13	11	12	11	11

Color of the captured marble shrimp: body is brown and slightly green in color with yellow and white speckled spot and having a typical tuft of cirri on the back. Anterior margins of carapace pale yellow with brownish irregular crescentic markings. Abdomen dorsally with roseate-ringed yellowish blotches. The third maxilliped and the pereopods are pale yellow regularly ringed by brown bordered bluish bands.

Discussion

Female marble shrimps can be distinguished from males by the dorsal margin of the carapace and the abdomen which have tufts of setae (denser in the females) and the females possess an obvious brush-like structure of setae on the first pair of legs. However, the males have elongated chaelae which are longer than body (Poupin & Juncker, 2010).

Marble shrimps are hardy and attractive crustaceans, popular among aquarists for their ornamental coloration. They are variable in color and the ground color can be red, blue or brown, mottled with brown or green. Kemp (1916) described that coloration of the marble shrimps of

living specimens is very wonderful. Jones (1986) stated that the color of *Saron marmoratus* is "marbled or mottled in varying shades of brown".

Our observations show that marbled shrimp specimen was found in the entrance of the cave near to sea urchin. The habitat inside the cave is formed of blocks that are covered with calcareous algae. This species is nocturnal and it is commonly found shelters in crevices during the day and forages for prey at night. It commonly feeds on coral and polyps.

The present study shows a remarkable rapid eastward expansion of marble shrimp from the southeastern to northeastern coasts of the Mediterranean basin. The present finding of *S. marmoratus* in the coast of Çevlik is the first observation from the Eastern Mediterranean. Up to date, this species has not been observed in the Turkish Marine waters.

Although, the past and present records of this species in the Mediterranean Sea suggest that *S. marmoratus* probably be entered to the Mediterranean through the Suez Canal. However, a ship-mediated introduction of this species from the Indo West Pacific to the Mediterranean Sea should also be considered due to its small body size. Moreover, *S. marmoratus* has high demand and good price in the marine aquarium trade which also arouse suspicion on its entrance to the Mediterranean for aquarium purposes.

This newly established species can have an enormous impact on ecosystem functioning, especially through competition with native species, and also this species should be continuously monitored in the Mediterranean.

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