ISSN: 0001-5113 AADRAY	ACTA ADRIAT., 57(1): 187 - 191, 2016	SHORT COMMUNICATION

Synchiropus sechellensis (Actinopterygii: Perciformes: Callionymidae), a new alien in the Aegean Sea and Hellenic waters

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Synchiropus sechellensis Regan, 1908 was discovered in Kastellorizo Isl. (Levantine Sea, Greece) in September 2014, few months after its first record in Antalya Gulf, Turkey. Later, in February 2016, the species was recorded for the first time in the Aegean Sea, in Rhodes Island. The short time interval between the findings indicates a possible establishment in the area and a dynamic spread of the species northwards in the Eastern Mediterranean.

Key words: *Synchiropus sechellensis*, Callionymidae, alien fish, Aegean Sea, Eastern Mediterranean

INTRODUCTION

The family Callionymidae comprises a total of 182 valid recent species in tropical and temperate seas (FRICKE, 2002). Up to recent years, eight species were known from the Mediterranean (FRICKE, 1986), including the Lessepsian immigrant *Callionymus filamentosus* Valenciennes, 1837, one of the most common by-catch species in local fisheries of the eastern Mediterranean (GOLANI, 1998; GOLANI *et al*., 2006).

Synchiropus sechellensis Regan, 1908, is a tropical demersal species recorded from depths down to 91 m (FRICKE 1981). It occurs over sandy or muddy substrata, among weeds and in coral reefs from tide pools and the surf zone (FROESE & PAULY, 2016). Described from Seychelles, its natural dispersion denotes a large gap as it includes the Indo-West Pacific from the Red Sea to Gulf of Aden, Maldives and eastwards the Chesterfield Islands and New Caledonia (FRICKE, 2002; FROESE & PAULY, 2016). The species was first reported in the Mediterranean Sea by GÖKOĞLU *et al*. (2014), from Antalya Gulf, Turkey, collected by bottom trawl operation at a depth of 30-50 m, in April 2014.

This study documents the occurrence of the alien fish *S. sechellensis* for the second and third time in the Mediterranean Sea and for the first time in the Aegean Sea and Hellenic waters.

MATERIALS AND METHODS

Two male specimens of the Seychelles dragonet *S. sechellensis* (Total length 80 mm, Standard length 70 mm) were found in the Port of Kastellorizo Isl., Greece (36°09'01.5"N, 29° 35'31.8"E) in September 2014. One of them was photographed with u/w camera (Fig. 1), while the second (Fig. 2) was caught with a small fishing net, identified and photographed out of the water and successively released. The two specimens were observed at a depth of about 3 m, on a muddy and rocky substrate, very close to the shore. Deeper in the same place, where the substratum is finer (silty mud), the Lessepsian fish *C. filamentosus*, *Upeneus pori* (Ben-Tuvia & Golani, 1989) *Torquigener flavimaculosus* (Hardy & Randall, 1983) and *Fistularia commersonii* (Rüppell, 1835) were also observed.

Fig. 1. A male specimen of S. sechellensis *(Total length 80 mm) from Kastellorizo Isl., Greece, September 2014.*

Fig. 2. Ventral view of a specimen of S. sechellensis *(Total length 80 mm) from Kastellorizo Isl., Greece, September 2014*

A third male specimen of the Seychelles dragonet (total length: 126.2 mm, weight: 20.48 g) was collected on February 1, 2016 from Rhodes, Southeastern Aegean Sea, Greece, during experimental boat-seining in the Gulf of Trianda, Northwest coast of the island (36°25'36.0"N, 28°11'24.1"E) from a depth of 10-30 m, over a sandy to muddy bottom. The specimen was photographed (Fig. 3) and preserved in 10 % formalin at the Hydrobiological Station of Rhodes collection (HSR120).

Identification of individuals was based on FRICKE (1983, 2000).

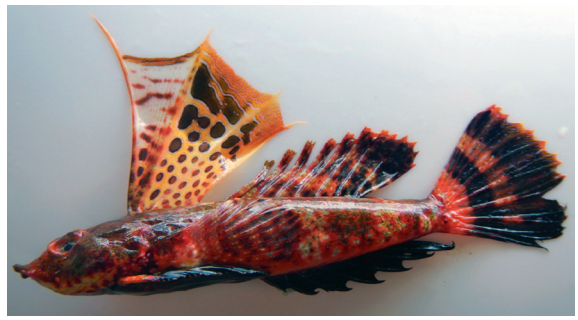

Fig. 3. The male of S. sechellensis *(Total length 126.2 mm) caught on 1 February 2016 in Rhodes Isl., Greece.*

RESULTS AND DISCUSSION

The body of the species is elongated and moderately flattened. In males, the first spine of the first dorsal fin is long, while the following three spines are a little shorter (Fig. 3). Almost circular brown-red blotches of various sizes with a whitish outline are scattered on the in-between yellow to orange membrane. Anal fin rays are dark colored and solid with the last one splitting at its base into two branches. Close to its base, the preopercular spine has 1 or 2 forward pointed spines whereas its posterior end is upcurved. Because of the existence of two tooth-like projections on its upper edge, the tip of the preopercular spine resembles a trident (Fig. 4). Two arched dark colored bands appear on the caudal fin. Moreover, the sexual dimorphism differentiates the females by the presence of a rounded snout, a shorter urogenital papilla, and a dissimilar overall color pattern. Meristics,

measurements and main ratios (Table 1) agree with FRICKE (1981, 1983 and 2000) and GÖKOĞLU *et al*. (2014). Apparently, the specimen from the Aegean has the longest standard length among the ones previously studied in their natural range and the Mediterranean.

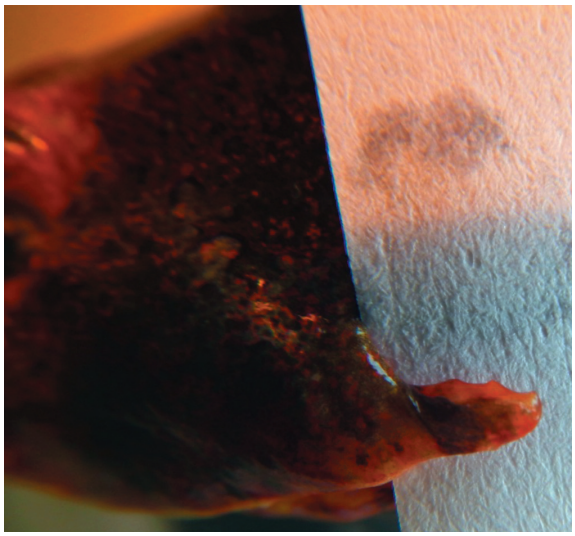

Fig. 4. Detail showing the left preopercular spine of the male S. sechellensis *from Rhodes Isl., Greece.*

The Dodecanese complex is a region particularly prone to biological invasions (CORSINI-FOKA *et al*., 2015). By the end of 2015, the list of alien fishes in this area included 32 species, the latest ones being *Oxyurichthys petersi* (Klunzinger, 1871), *Plectorhinchus gaterinus* (Forsskål, 1775), and *Scarus ghobban* (Forsskål, 1775) (CORSINI-FOKA & SARLIS, 2016; KARACHLE *et al*., 2016). The recent findings of *S. sechellensis,* described here, suggest that this tropical fish species, with low vulnerability (FROESE & PAULY, 2016), is expanding its distribution range fast.

GÖKOĞLU *et al*. (2014) suggests that the vessels are the possible pathway vector of *S. sechellensis* introduction into the Mediterranean. However, these new records, which are far from the first finding location (Fig. 5), suggest that the species has established a small population in Mediterranean. Its occurrence in the Red Sea (GOLANI & BOGORODSKY, 2010) also suggests that *S. sechellensis* is a Lessepsian immigrant. The spreading of this new alien species in the area may be favored by the increase of the Mediterranean Sea temperature observed in the last years (RAITSOS *et al.,* 2010; PANCUCCI-PAPADOPOULOU *et al.,* 2012).

Further attention and studies are necessary because the rapid expansion of this callionymid could indicate an invasive behavior of uncertain biodiversity threats.

ACKNOWLEDGEMENTS

The authors would like to thank Mr. Haris Hatzialexiou for providing the specimen from Rhodes. The study of the alien species from Greece was partially funded by the East and South European Network for Invasive Alien Species - a tool to support the management of alien species in Bulgaria (ESENIAS-TOOLS) (EEA funded - Contract No. Д-33-51/30.06.2015) (F.C. and A.Z.) and the COST (European Cooperation in Science and Technology) Action TD1209 Alien Challenge (F.C.) projects.

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Received: 29 February 2016
Accepted: 11 March 2016

Synchiropus sechellensis (Actinopterygii: Perciformes: Callionymidae), nova strana vrsta u Egejskom moru i grčkim vodama

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SAŽETAK

Synchiropus sechellensis (Regan, 1908) je vrsta otkrivena kod otoka Kastellorizo u Levantskom moru (Grčka) u rujnu 2014., nekoliko mjeseci nakon što je po prvi put zabilježena u Antalijskom zaljevu u Turskoj. Ova vrsta je po prvi put zabilježena u Egejskom moru kod otoka Rodosa kasnije u veljači 2016. Kratak vremenski period između ova dva nalaza ukazuje na mogućnost nastanjivanja na ovom području i dinamično širenje vrste sjevernije u istočnom Sredozemlju.

Ključne riječi: *Synchiropus sechellensis*, Callionymidae, strana vrsta, Egejsko more, istočno Sredozemlje