



Tentang keberadaan tiga spesies campuran di pantai Mediterania Tenggara Turki

On the occurrence of three blennid species in the South-eastern Mediterranean coast of Turkey

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Deniz Ergüden^{a*}, Menderes Şereflişan^b, and Necdet Uyğur^b

^aIskenderun Technical University, Marine Sciences and Technology Faculty, Department of Marine Sciences, TR 31220, Iskenderun, Hatay, Türkiye

^bVocational School of Maritime, University of Iskenderun Technical, Department of Underwater Technologies, TR 31220 Iskenderun, Hatay, Türkiye

Abstract

In the present study, three blennid species of *Aidablennius sphinx* (Valenciennes, 1836) *Parablennius tentacularis* (Brünnich, 1768) and *Scartella cristata* (Linnaeus, 1758) were reported from the southeastern Mediterranean waters with visual records during an underwater survey conducted on October 19, 2015 in the Konacik and, on July 30, 2016 in the Çevlik coast at a depth ranges of 2-10 m. The present report is the occurrence and is the first confirmation of three blennid species from Iskenderun Bay, Turkey (South-eastern Mediterranean Sea). Besides, this study will be useful fisheries biology and ecology and also contribute to fisheries scientists.

Keywords: *Blenniidae*, *Combtooth blennies*; *Iskenderun Bay*; *Mediterranean Sea*; *observation*

1. Introduction

Blennids belong to the Blenniidae family, and this family known to be combtooth blennies contains a highly rich diversity of species in the seas. This family currently includes 405 valid species distributed in two subfamilies (Blenniinae and Salariaeinae) and 59 valid genera (Fricke, *et al.*, 2023). They are distributed in tropical and subtropical waters worldwide (Nelson, 2006).

In the Mediterranean, blennies consist of 23 valid species belonging to nine genera with a wide geographical range in the Mediterranean waters (Golani *et al.*, 2006; Froese and Pauly, 2023). However, only three of these species; *Omobranchus punctatus* (Valenciennes, 1836), *Petroscirtes ancylodon* Rüppel, 1838 and *Parablennius thysanius* (Jordan & Seale, 1907) are Indo-Pacific origin and also they are known to inhabit in the Red Sea. Later, these blenny species penetrated the Mediterranean via the Suez Canal and were reported by researchers (Goren and Galil, 1989; Golani, 2004; Özbek *et al.*, 2014; Azurro *et al.*, 2018).

To date, a total of 20 blennid species have been recorded from Turkish seas, most of which live in very shallow waters (Bilecenoğlu *et al.*, 2014; Fricke *et al.*, 2007). Although the three blennid species Blennie sphinx *Aidablennius sphinx* (Valenciennes, 1836) Tentaclad blenny *Parablennius tentacularis* (Brünnich, 1768) and Molly miller *Scartella cristata* (Linnaeus, 1758) were reported from the Mediterranean coasts

of Turkey by Erazi (1942) and Geldiay (1969) and also, they mentioned within the Turkish marine checklists by Bilecenoğlu *et al* (2014), so far these three blennid species of specimens have not been confirmed record from the Iskenderun Bay (southeastern Mediterranean Sea, Turkey).

In this study, we report for the first time the sightings of three blennies from Turkey's Mediterranean waters southeastern Mediterranean Sea coast of Turkey (Iskenderun Bay). Besides, the present study is the observation and first confirmation of three blennid species from Iskenderun Bay, Turkey.

2. Materials and Methods

Two blennid specimens, *Aidablennius sphinx* and *Scartella cristata*, at a depth of 2-8 m during the SCUBA diving expedition on 19 October 2015 in Konacik/Arsuz (36° 36' N-35° 82' E) and another blennid specimen of *Parablennius tentacularis* in 30 July 2016 at a depth 10 m from Çevlik/Samandag coast (36° 13' N-35° 91' E) (Iskenderun Bay) were observed in the underwater survey (Fig. 1). These three blennid specimens were photographed on a rocky habitat, partially covered with algae (Fig. 2, Fig. 3, and Fig. 4). For all species the morphological and color descriptions agree with the identification used by Zander (1986) and Bath (1990).

* *Korespondensi:* Faculty of Fisheries, Marine Sciences and Technology, Iskenderun Technical University, TR 31220. Iskenderun, Hatay Turkey.
Tel: +903266141693
e-mail: deniz.erguden@iste.edu.tr



Figure 1. Sampling area

3. Results

3.1. *Aidablennius sphynx* (Valenciennes, 1836)

Description of the Mediterranean specimen: The body is scaleless. A single unbranched filament is above each eye. The anterior part of the dorsal fin is rounded and has no spots. A red ring behind the eye edges a blue spot.

Color: The body is green or brown with vertical bands with blue edges.

Remarks: The original distribution of *Aidablennius sphynx* is Eastern Atlantic, also known as the Mediterranean and Black Sea (Froese and Pauly, 2023). This species is found in very shallow, rocky, littoral zone, exposed to sunlight, and usually covered algae between 0-3 m depths. The maximum length is up to 8 cm. It feeds on benthic invertebrates and algae (Zander, 1986). Eggs are demersal and adhesive, and male individuals guard eggs in burrows (Breder and Rosen, 1966). Larvae are planktonic and commonly found in shallow, coastal waters (Watson, 2009).



Figure 2. *Aidablennius sphynx* (Valenciennes, 1836) in Iskenderun Bay (SE. Mediterranean, Turkey)

3.2. *Parablennius tentacularis* (Brünnich, 1768)

Description of the Mediterranean specimen: The body is scaleless. It has a well-developed pair of tentacles on its head above its eyes. There is a dark spot on the head of the dorsal fin.

Color: The body is light brown. There are 7-8 vertical dark brown stripes on the sides and small light and dark spots on the dorsal and anal fins.

Remarks: *Parablennius tentacularis* is widely distributed in the eastern and northeastern Atlantic. It is also found in the Mediterranean Sea including the Sea of Marmara and the

western Black Sea, except in parts of North Africa (Zander, 1986). It is commonly found at 3-15 m depth (Zander, 1986). The maximum length reaches 15 cm (Bauchot, 1987). *Parablennius tentacularis* occurs over sandy, rocky substrata with boulders and light vegetation and hides in crevices (Zander, 1986). Male specimens are territorial, make nests in empty bivalve shells and provide solitary parental care for the eggs (Giacomello and Rasotto, 2005).



Figure 3. *Scartella cristata* (Linnaeus, 1758) in Iskenderun Bay (SE. Mediterranean, Turkey)

3.3. *Scartella cristata* (Linnaeus, 1758)

Description of the Mediterranean specimen: The body is scaleless. Hair-like delicate tentacles on the head are tiny and in rows and extend from above the eye to the origin of the dorsal fin.

Color: The body is gray-brownish, sometimes reddish. There are 6-7 vertical bands of dark olive green on the body.

Remarks: *Scartella cristata* is widely distributed in the eastern Atlantic. It is known from including the Mediterranean and Black Sea. Also, this species occurs in the western and east central Atlantic. It over hard substrates in shallow waters, tide pools and seagrass rafts (McEachran and Fechhelm, 2005). This species is known to seek shelter in crevices (Rangel and Gulmaras, 2010) and is found depths range 0 - 10 m (Lieske and Myers, 1994). It is known to consume algae, detritus, and small invertebrates (Daigle *et al.*, 2013). The maximum length is 12.0 cm, TL.



Figure 4. *Parablennius tentacularis* (Brünnich, 1768) in Iskenderun Bay (SE. Mediterranean, Turkey)

4. Discussion

In Iskenderun Bay, small benthic fishes in shallow waters have been poorly investigated. Combtooth blennies are not important for recreational fishing as they are small fish. However, they are often found as the dominant fish community on rocky bottoms within a few meters of depth and in tidal pool

environments. Also, they are playing so an essential role in the functioning of the coastal ecosystem.

Little is known about the distribution and population of these three blennid species. They live in holes, crevices and caves on shallow rocky shores, and the male guards the nest. They often leave their crevices or holes to feed, using their pectoral fins to cling to rocks to resist the action of the waves (Zander, 1986).

The three blennid species have been assessed globally as Least Concern (LC) on the IUCN Red List (IUCN, 2023) and also on the Mediterranean Red List (Malak *et al.*, 2011). However, Fricke *et al.* (2007) reported three blennid species *A. sphyinx* and *P. tentacularis* as Vulnerable (VU) and *S. cristata* as Near Threatened (NT) and stated that there is a high probability of regional declines for these three blennid species.

In the Mediterranean Sea, the blennid species has no commercial importance in fisheries. Primarily, these species are threatened by pollution, habitat loss, and habitat degradation caused by commercial fishing activities (IUCN, 2023). To date, there are no species-specific conservation measures in the eastern Mediterranean for three blennid species. Besides, the occurrence of these species in the Mediterranean, their population status and possible threats are not well-known yet. Thus, further monitoring studies are needed in the area for blennid species.

5. Conclusion

To date, no specific location or detailed information has been given about these three blennid species in this region. Our study herein reports the sighted and first confirmed three blennid records in the southeastern Mediterranean, Turkey. This study also will be useful in fisheries biology and ecology, as well as making important contributions to fisheries scientists working on this subject.

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