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## First record of the broad-banded cardinal fish *Apogon fasciatus* (White, 1790) from Turkey

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### Abstract

Two specimens of the alien cardinal fish *Apogon fasciatus* (White, 1790) are recorded for the first time in Turkey and second time in the Mediterranean Sea. This is the fourth Indo-Pacific apogonid species documented in the Mediterranean Sea, and the introduction of this species to the eastern Mediterranean is due to migration from the Red Sea via the Suez Canal.

**Keywords:** *Apogon fasciatus*; Alien species; Eastern Mediterranean; Turkey.

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The number of Red Sea fish species, introduced into the Mediterranean through the Suez Canal has reached 77 (ZENETOS *et al.*, 2008; GOLANI *et al.*, 2008; GOREN *et al.*, 2008; GOREN *et al.*, 2009; GOLANI *et al.*, 2010). Recently, GOREN *et al.* (2009) and GOREN *et al.* (2010) have added two additional alien species.

To date, forty nine alien fish species, originally from the Red Sea and the Indo-Pacific Ocean have been reported in Turkish waters (BILECENOGLU *et al.*, 2010). Recently one species was added to the Turkish ichthyofauna: *Pomadasys stridens* was recorded from Iskenderun Bay (BILECENOGLU *et al.*, 2009). An additional new species, *Apogon fasciatus* (White, 1790) is reported here.

The Apogonidae family has been represented in the Turkish waters up until recently by two species: the native species *Apogon imberbis* L. and the Lessepsian immigrant *Apogon pharonis* Bellotti, 1874 until 2005. However, in recent years two new Indo-Pacific cardinal fish have been recorded: *Apogon queketti* Gilchrist, 1903 (ERYILMAZ & DALYAN, 2006) and *Apogon smithi* (Kotthaus, 1970) (GOREN *et al.*, 2009) from the Turkish coasts of the Eastern Mediterranean.

Two specimens of broad-banded cardinal fish, 62 and 52 mm in total length (TL), 50 and 41 mm in standard length (SL), were collected by a commercial purse seiner (F/V Koca Reis) from Iskenderun Bay (36° 10' N - 35° 51' E), at a depth of 36 m on 25

March 2010 (Fig. 1). The specimens were preserved in 4% formalin. Samples were deposited at the Museum of the Faculty of Fisheries, Mustafa Kemal University, Iskenderun-Hatay (collection numbers: MSM-PIS/2010-1).

Descriptions of the examined specimens are as follows: first dorsal fin rays VII; the first spine is very short, the third spine is longest in the first dorsal fin and very robust. Second dorsal fin ray I + 9, anal fin ray 2 + 9, pectoral fin rays 15-16, caudal fin rays 22, developed gill rakes on first gill arch 16, three-four large scales on the opercula, a lateral line with pored scales 25-26 and 2 scales without pores on the base of the caudal fin. Head length 3.5-3.7 body depth 3.2-3.3, caudal peduncle depth 1.2-1.3 all at standard length (SL). Eye diameter 2.6-2.9, snout length 1.9-2.0,

postorbital length 0.8-0.9, pre-opercular length 0.7-0.9, interorbital space 1.5-1.7 all at head length. The body color is silver on the sides and whitish on the belly, with a broad, blackish mid-lateral stripe which extends to the end caudal fin. The dorsal and anal fins are in part whitish, and there is a dark bar on the rear margin of the fin (Fig 2). The morphometric measurements, meristic characters and color agree with descriptions of *Apogon fasciatus* given by FRAUSER (2005) and GOREN *et al.* (2009).

The broad-banded cardinal fish has a widespread distribution throughout the Red Sea, Mozambique, Fiji, New Caledonia, the Persian Gulf and east to the western Pacific (FRASER, 2005). The broad-banded cardinal fish inhabits coastal reefs and sandy or weedy areas, which can be found within

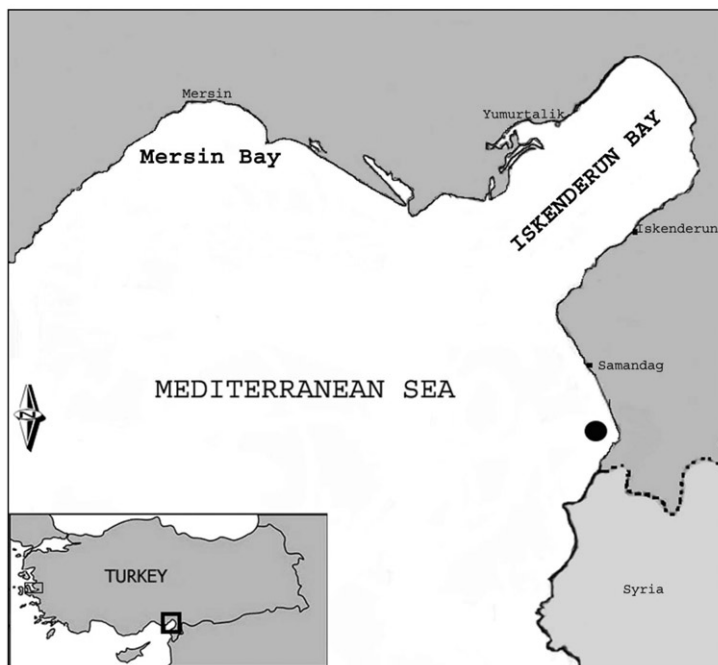


Fig. 1: Sampling location (●) of *Apogon fasciatus*.



**Fig. 2:** *Apogon fasciatus* (White, 1790) from Iskenderun Bay, Turkey.

the depth range of 2-128 m (LIESKE & MYERS, 1994; FROESE & PAULY, 2010). *A. fasciatus* reaches the size of 10.3 cm and feeds on zooplankton (RANDALL, 2005; GOREN *et al.*, 2009).

*A. fasciatus* is clearly distinguished from the other four Apogonids by a blackish mid-lateral stripe which extends to the end caudal fin on the body. *Apogon pharonis* has three dark, vertical bars on the flanks between the anterior of the dorsal and the caudal fin, and a dark ocellus within the first bar. *Apogon queketti* has dark spots on the scales, from 6-7 longitudinal stripes on the body and a black stripe on the margin of the anal fin. There is a black spot on the upper part of the first dorsal fin from the third spine to the seventh spine. The native species *Apogon imberbis* can easily be dis-

tinguished from lessepsian apogonid species by its red body colour and six spines in the first dorsal fin.

The first record of *A. fasciatus* from the Mediterranean Sea was given by GOREN *et al.* (2009) on the coast of Ashdod in Israel, collected by a trawler at a depth of 40 m. Our finding from Iskenderun Bay is the second record of the species from the Mediterranean Sea and indicates that *A. fasciatus* has extended its range northerly to the eastern Levant.

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