

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.

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 ($36^{\circ}10'N$ - $35^{\circ}51'E$), 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

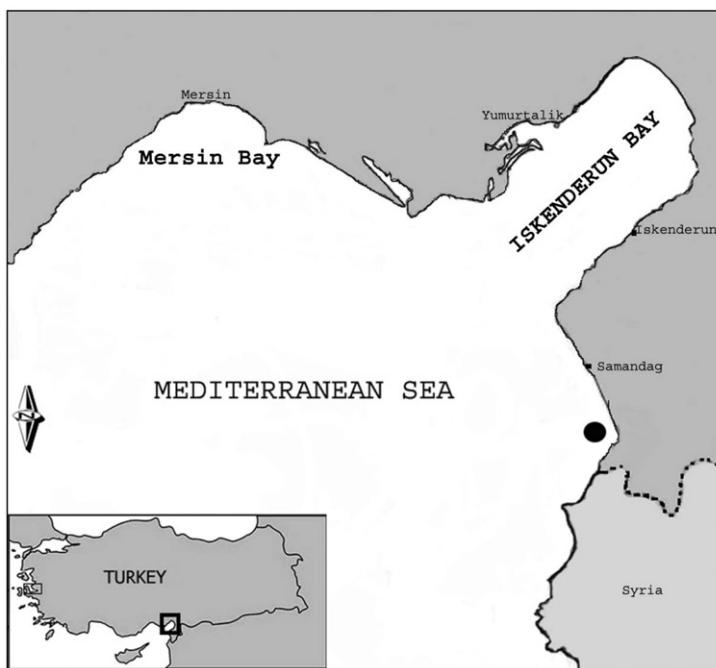


Fig. 1: Sampling location (●) of *Apogon fasciatus*.



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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