



## THE OCCURRENCE OF ROYAL FLAGFIN *Aulopus filamentosus* (Bloch, 1792) IN MERSIN BAY (NORTH-EASTERN MEDITERRANEAN) TURKEY

Deniz Erguden<sup>1\*</sup>, Yusuf Kenan Bayhan<sup>2</sup>, Sibel Alagoz Erguden<sup>3</sup>, Ayhan Altun<sup>1</sup>

<sup>1</sup> Department of Marine Science, Marine Sciences and Technology Faculty, Iskenderun Technical University, TR 31220, Iskenderun, Hatay, Turkey

<sup>2</sup> Fisheries Department, Kahta Vocational School, Adiyaman University, TR 02400, Kahta, Adiyaman, Turkey

<sup>3</sup> Fisheries Department, Imamoglu Vocational School, Cukurova University, TR 01700, Imamoglu, Adana, Turkey

\*Corresponding Author, Email: deniz.erguden@iste.edu.tr

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### ABSTRACT

Three specimens (1 male and 2 females) of royal flagfin *Aulopus filamentosus* (Bloch, 1792) were caught at a depth of 184 m off Erdemli, Mersin Bay (northeastern Mediterranean, Turkey) in June 2015. The present paper reports the first occurrence and is the confirmation of royal flagfin *A. filamentosus* from the northeastern Mediterranean Sea, Turkey. Since it has been recorded only once in the last sixty years, this species could be considered as exceptionally rare in the easternmost area of the Mediterranean Sea, Turkey.

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### INTRODUCTION

The family Aulopidae is represented in Mediterranean waters with a single genera and a single species (Froese and Pauly, 2016): *Aulopus filamentosus* (Bloch, 1792). *A. filamentosus* mostly inhabits muddy and sandy bottoms at maximum depths of 100-200 m (Sulak, 1990) and is widely distributed in the northern Atlantic and western central Atlantic from Senegal to the Caribbean and Venezuela and the Mediterranean, except the eastern part (Sulak, 1984; Carvalho-Filho et al., 2010). Occurrence of *A. filamentosus* in the Mediterranean was reported from Italian waters by Tortonese (1947; 1970).

Further reports of the species have been given from off the Tunisian, Egyptian and Libyan waters (Ben Souissi et al., 2010; El Sayed, 1994; Al-Hassan and El-Silini, 1999), as well as the presence in Adriatic waters (Dulčić, 2006). In the eastern Mediterranean this species has been reported from Greek Aegean waters (Economidis, 1973), the Turkish Mediterranean coast (Akşiray, 1954 and Bilecenoglu et al., 2002a), Syrian waters (Saad, 2005) and the coast of Israel (Golani, 2005; Golani et al., 2006), easternmost limits of the extension range of the species.

First report of *A. filamentosus* from Turkish waters of the Mediterranean Sea was made in 1954 (Akşiray, 1954) and the presence of the species in Turkey was confirmed

with a single record from the Babakale coast, Çanakkale in the northern Aegean Sea (Işmen et al., 2006). Deep-sea fishing off the coast of Turkey in the northeastern Mediterranean has only begun in recent decades and fishing activity goes further off the coast continually which results in the extension of the range of fishing area up to the continental slope and causes the capture of fish from new regions. As a result, a number of rare and new demersal species have, nowadays, been captured from the Mediterranean Sea with bottom trawls (Bayhan et al., 2015).

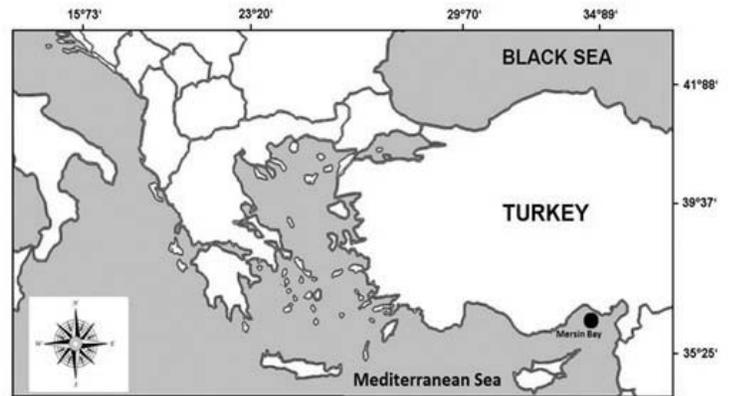
Although *A. filamentosus* is recorded in the Mediterranean Sea coast of Turkey, the species is rare and no specimens up to now have been reported from the northeastern Mediterranean waters of Turkey. This study reports the first occurrence of *A. filamentosus* from Mersin Bay and confirms the presence of the species in the northeastern Mediterranean Sea coast of Turkey.

## MATERIALS AND METHODS

On 23 June 2015, three specimens (1 male and 2 female) of the royal flagfin *A. filamentosus* (Bloch, 1792) were captured at a depth of 184 m with a commercial bottom trawl from north-east of Erdemli (36° 20' 852" N - 34° 39' 609" E) in Mersin Bay (northeastern Mediterranean, Turkey) (Fig 1) Morphometric measurements of the three specimens were made to the nearest 0.1 mm using digital caliper. All measurements and counts, and the morphological description and colour agree with the descriptions of Sulak (1984), Ben Souissi et al. (2010) and Carvalho-Filho et al. (2010). The specimens are deposited in the Museum of the Faculty of Marine Sciences and Technology, Iskenderun Technical University, with catalogue numbers (MSM-PIS/2015-4, MSM-PIS/2015-5 and MSM- PIS/2015-6) (Fig. 2)

## RESULTS

The Mediterranean specimen of *A. filamentosus* is described as follows: body moderately elongated and slender; head conical and large; snout relatively long and depressed; eyes large; upper jaw expanded posteriorly with two supramaxillaries, reaching to or beyond the eye center. First 2-4 dorsal fin rays in males elongated; a small adipose fin above midpoint of anal fin; anal fin, shorter and lower than the dorsal fin; pelvic fin large, longer than pectoral; caudal fin forked. Scales ctenoid, adherent, small axillary scales present at bases of pectoral and pelvic fins. The distinguishing meristic and morphometric characteristics of the three specimens are given in Table 1. Color greenish-brown to olive, with darker saddles and lateral blotches; head darker, purplish to pink; upper body and head suffused with yellow; dorsal fin tip black;



**Fig 1.** Map of Turkey, showing the collection site (●) of *Aulopus filamentosus*



**Fig 2.** Male (above) and female (below) specimens of *Aulopus filamentosus*, 290 mm total length, (MSM-PIS/2015-4) and 285 mm total length, (MSM-PIS/2015-5) from Mersin Bay, northeastern Mediterranean Sea, Turkey

the males are more brightly colored, with red, orange and yellow markings, and bars on fins, but females might also present smaller reddish to orange marks on fins; color in the scales are iridescent with transverse bands, and the belly silvery to whitish or light pink; adipose fin tip yellowish-green to orange.

## DISCUSSION

*A. filamentosus* is a demersal species which lives in Atlantic and Mediterranean waters (Froese and Pauly, 2016) and reaches 440 mm standard length (SL) (Sulak, 1990). It commonly feeds on small fishes (Sulak, 1984). According to the previous records of *A. filamentosus* in the Mediterranean, this species is considered as a rare fish and its eastward distribution in the Mediterranean Sea appears

**Table 1.** Morphometric measurements (in mm and as % TL, % HL), meristic counts and masses recorded in three *Aulopus filamentosus* caught in northeastern Mediterranean waters

Metric (mm)	Male	%	Female	%	Female	%
Specimen	1		1		1	
Total length	290	-	285	-	230	-
Fork length	265	91.37 TL	260	91.22 TL	215	93.47TL
Standard length	253	87.24 TL	247	86.66 TL	201	87.39 TL
Head length	56	19.31 TL	55	19.29 TL	46	20.00 TL
Eye width	17	30.35 HL	17	30.90 HL	15	32.60 HL
Eye diameter	18	32.14 HL	18	32.72 HL	11	23.91 HL
Inter orbital distance	15	26.78 HL	13	23.63 HL	13	28.26 HL
Pre-orbital length	23	41.07 HL	23	41.81 HL	18	39.13 HL
Post-orbital length	42	75.00 HL	40	72.72 HL	33	71.73 HL
Mouth	37	66.07 HL	34	61.81 HL	29	63.04 HL
Snout length	08	14.28 HL	11	20.00 HL	07	15.21 HL
Body depth	38	13.10 TL	38	13.33 TL	30	13.04 TL
Caudal peduncle	15	5.17 TL	16	5.61 TL	13	5.65 TL
Pre-dorsal length	93	32.06 TL	92	32.28 TL	80	34.78 TL
Pre-pectoral length	74	25.51 TL	73	25.61 TL	62	26.95 TL
Pre-anal length	178	61.38 TL	177	62.10 TL	147	63.91 TL
Pre-ventral length	91	31.38 TL	92	32.28 TL	75	32.60 TL
Ventral-anal distance	91	31.38 TL	98	34.38 TL	79	34.34 TL
Pectoral-ventral distance	12	4.13 TL	15	5.26 TL	16	6.95 TL
Pectoral-dorsal distance	27	9.31 TL	21	7.36 TL	21	9.13 TL
Pectoral-anal distance	92	31.72 TL	98	34.38 TL	91	39.56 TL
Total weight (g)	210.333		189.623		99.541	
<b>Meristic</b>						
Dorsal fin ray	15		15		14	
Pectoral fin ray	13		13		13	
Anal fin ray	11		11		11	
Ventral fin ray	9		9		9	
Caudal fin ray	21		21		20	
Gill rakers	14		14		13	
Lateral line scales	53		53		52	

to be limited (Akşiray, 1954; İşmen et al., 2006). Deep-sea research in marine waters of Turkey has been limited until the last two decades, but recent exploratory fishing activities have resulted in the report of a number of new records and new species for the Mediterranean and Aegean Sea (Bilecenoglu et al., 2002b; Deval, 2013; Bilecenoglu et al., 2014; Erguden and Bayhan, 2015; Bayhan et al., 2015)

coast of Turkey. The first samples of *A. filamentosus* were caught in 1950s by Akşiray (1954) in the Mediterranean coast of Turkey. Present report is the first confirmation of the presence of the species in the northeastern Mediterranean (Mersin, Turkey) with three (1 male and 2 females) individuals caught approximately after 60 years of its first appearance in Turkish marine waters.

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## SAŽETAK

### POJAVNOST *Aulopus filamentosus* (Bloch, 1792) U ZALJEVU MERSIN (SJEVEROISTOČNI MEDITERAN) TURSKA

Ulovljena su tri primjerka (1 mužjak i 2 ženke) barjaktarke, *Aulopus filamentosus* (Bloch, 1792), na dubini od 184 m u gradu Erdemli, u zaljevu Mersin (sjeveroistočni Mediteran, Turska) u lipnju 2015. godine. U ovom je radu prikazano prvo pojavljivanje te je potvrda barjaktarke, *A. filamentosus*, iz sjeveroistočnog Sredozemnog mora u Turskoj. S obzirom da je zabilježena samo jednom u posljednjih šezdeset godina, ova vrsta smatra se iznimno rijetkom u najistočnijem dijelu Sredozemnog mora (Turska).

**Ključne riječi:** *Aulopus filamentosus*, zaljev Mersin, Sredozemno more, Turska

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