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SHORT PAPER

Northernmost Record of *Upeneus moluccensis* (Bleeker, 1855) (Osteichthyes: Mullidae) in the Turkish Coasts of the Aegean Sea

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Abstract

Two specimens of *Upeneus moluccensis* (Bleeker, 1855) were caught in İzmir and Çandarlı Bays, Aegean Sea of Turkey by bottom trawlers at depths of about 80-85 m, respectively. These fish are the first records from both areas, and this ichthyologic note constitutes also the northernmost extension range of the species in the Aegean Sea.

Keywords: *Upeneus moluccensis*, Lessepsian, new record, dispersion.

***Upeneus moluccensis* (Bleeker, 1855) (Osteichthyes: Mullidae)'in Türk Ege Denizi Kıyılarının En Kuzeyinden Kaydı**

Özet

Upeneus moluccensis (Bleeker, 1855)'in iki bireyi Türkiye'nin Ege Denizi'nde sırasıyla İzmir ve Çandarlı Körfezleri'nde 80-85 m derinliklerde dip trolüyle yakalanmıştır. Bu balıklar her iki alandan ilk kayıtlardır ve bu ihtiyolojik not Ege Denizi'nde türün en kuzey dağılım alanlarını da oluşturmaktadır.

Anahtar Kelimeler: *Upeneus moluccensis*,Lesepsiyen, yeni kayıt, dağılım.

Introduction

Mullidae family includes about 70 species in all tropical and subtropical seas, and 5 species in the Mediterranean, four in the eastern basin, of which two (*U. moluccensis* and *U. pori*) are Lessepsian immigrants (Golani *et al*., 2006). However, third Red Sea goatfish, *Parupeneus forsskali* was photographed in the Taşucu Bay, Mersin (Turkey) at a depth of 15 m in August 2004 (Çınar *et al*., 2006).

Goldband goatfish, *Upeneus moluccensis* (Bleeker, 1855) is a demersal schooling species that inhabits sandy or muddy bottom at depths of 10-120 m (Golani *et al*., 2006; Froese and Pauly, 2016). They invade the Mediterranean from the Red Sea via the Suez Canal (Golani *et al*., 2006). They are commercially important in the eastern Levant, and especially fished by trawl and gillnets.

Originally *U. moluccensis* had a wide Indo-Pacific distribution, in the Mediterranean extends from the coast of Israel, Lebanon, Southern Turkey and Aegean Sea to Libya (Hureau, 1986; Golani *et al*., 2006). It is very abundant in the eastern Levant (Golani *et al*., 2002).

U. moluccensis has been first recorded in Palestine as *Mulloides auriflamma* (Haas and Steinitz, 1947), following it (as *Mulloides flavolineatus* by Serbetis) has been reported around the Dodecanese Islands in 1947 (Corsini-Foka and Economidis, 2007). Since 1976, other Aegean records were from the coast of Rhodes (Papaconstantinou, 1990; Kalogirou *et al*., 2010). In early 1970s, Ben-Tuvia (1973) notified that it was found from a trawling operation in the Bay of Bodrum (Turkey), SE Aegean Sea. Subsequently actual records have been documented from Fethiye and Gökova Bays (Turkey) during the 1991-1992 trawl surveys by Kaya *et al*. (1999) and from the same bays during the 1991-1994 surveys by Torcu and Mater (2000); from Gökova Bay (Turkey) during the 2000-2001 by Öğretmen *et al*. (2005); from Hisarönü/Yeşilova Bays, Datca-Bozburun Peninsula (Turkey) during the 2002 underwater surveys by Oz *et al*. (2007); from Creten waters (Greece) on 19 June 2006 during the MEDITS survey by Peristeraki *et al*.

(2006); from Dodecanese Islands, SE Aegean Sea (Greece) during the 2008-2009 boat-seining surveys (Corsini-Foka *et al*., 2010); and lastly, from Southern Aegean Sea coasts of Turkey during the 2009-2010 trawl surveys (Bilge *et al*., 2014). As shown that this fish is well-known in the southern Aegean Sea.

This ichthyologic note presents the northernmost records of Lessepsian *U. moluccensis* for both Çandarlı and Izmir Bays in the Aegean Sea.

On 18 December 2015 and 29 January 2016, two specimens of *Upeneus moluccensis* were captured each time by a commercial trawler (codend 44 mm mesh size) from off the Bay of Izmir and Bay of Çandarlı at depths of about 80-85 m on sandy/muddy bottoms, respectively. The first specimen was having a total length (TL) of 124 mm captured at 38°40′ N and 26°36′ E (Figure 1). The second specimen was 115 mm TL (Figure 2), captured at 38°53′ N and 26°52’ E (Figure 1). Both specimens were preserved in 10% buffered formalin and deposited in the Ichthyological Collection of Ege University, Fisheries Faculty, under catalog numbers ESFM-PIS/2015-014 and ESFM-PIS/2016-003.

The specimens were measured to the nearest millimeter, and some morphometric and meristic counts were indicated in Table 1. Brief description of the specimens: body elongate, snout rounded, a pair of thin barbels. The color is red, sides and belly white, only upper caudal lobe with 5-6 dark oblique bars; a very distinct bright yellow longitudinal band on the lateral sides. All determined measurements, and color patterns are in accordance with the descriptions of Hureau (1986), Golani *et al*. (2002, 2006) and Froese and Pauly (2016).

U. moluccensis has been well-known Southern Aegean Sea, especially from Rhodes and Gökova Bay as well as Levantine basin. Ben-Tuvia (1973) has been reported for the first time from Bodrum vicinity in the Southern Aegean Sea of Turkey. Additionally, Papaconstantinou (1990) has been reported around Dodecanese Islands in the Southern Aegean Sea since 1976. However, there are some suspicious records for *U. moluccensis* from upper parts of the Aegean Sea. Ben-Tuvia (1972) first mentioned from *U. moluccensis* in Izmir Bay, but we believe this to be erroneous as no solid details were provided and no further records were made up to the present. Moreover, Akyol *et al*. (2011) did not mention it within Izmir fish fauna during the past four decades. Corsini-Foka and Economidis (2007) also erroneously reported occurring *U. moluccensis* from Kuşadası Bay, Turkey when referred to Kaya *et al*. (1999).

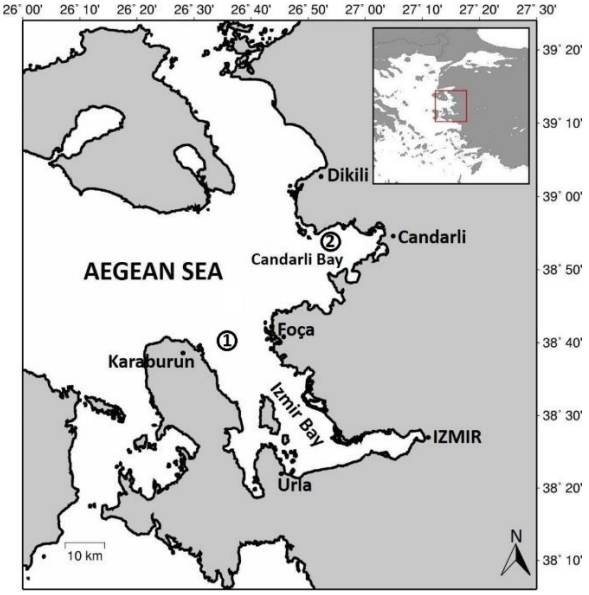

Figure 1. Map of catch locations (surrounded numbers 1 and 2) of both *Upeneus moluccensis.*

Figure 2. Specimen of *Upeneus moluccensis*, caught from Çandarlı Bay (Scale: 10 mm).

Table 1. Morphometric measurements, ratios and counts of *Upeneus moluccensis*

Locations	Izmir Bay		Çandarlı Bay	
Catalog number	ESFM-PIS/2015-014		ESFM-PIS/2016-003	
Measurements	Size (mm)	Proportion %	Size (mm)	Proportion %
Total length (TL)	124		115	
Fork length (FL)	114	91.9 TL	102	88.7 TL
Standard length (SL)	102	82.3 TL	96	83.5 TL
Maximum body depth	23	18.5 TL	22	19.1 TL
Predorsal fin length	37	29.8 TL	33	28.7 TL
Prepectoral fin length	30	24.2 TL	29	25.2 TL
Pre-anal fin length	69	55.6 TL	60	52.2 TL
Head length (HL)	28	22.6 TL	26	22.6 TL
Eye diameter	7	25.0 HL	7	26.9 HL
Preorbitary length	9	32.1 HL	8	30.8 HL
Counts				
1st Dorsal fin rays	VIII		VIII	
2nd Dorsal fin rays	8		8	
Anal fin rays	I+6		I+6	
Pectoral fin rays	15		15	

Whereas, no Kuşadası station for sampling was exist in trawl coordinates, even sampling stations were starting from Gökova Bay (*see*, Table 1 in Kaya *et al*., 1999).

Galil (2007) stated that there were competition between *U. moluccensis* and native *Mullus barbatus* in the Levantine due to have a similar diet, and occupy muddy bottoms at depths to 75 m, and *U. moluccensis* is caught with significant amounts of the trawl catches, when *M. barbatus* declines concurrently. This phenomenon can be caused financial losses of fishermen because of native *M. barbatus* have more monetary value than *U. moluccensis*.

In this study, records of *U. moluccensis* do not indicate established populations in the area, yet. However, this ichthyological note shows that this thermophilic fishes tend to spreading towards to northern latitudes such as Izmir and Çandarlı Bays step by step owing to the effects of the probable global warming.

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