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SHORT PAPER

Confirmed Occurence of the Longjaw Snake Eel, *Ophisurus serpens* (Osteichthyes: Ophichthidae) in Edremit Bay (Northern Aegean Sea), Turkey

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Abstract

On 15 January 2014, one mature female specimen of the longjaw snake eel, *Ophisurus serpens* was caught by long-line, from a depth of 40 m off Küçükkuyu (Edremit Bay). The species is a previously reported from the southern Aegean Sea and the eastern Mediterranean Sea. The main morphometric and meristic characters of this species which is rare in northern Aegean waters of Turkey are given.

Keywords: *Ophisurus serpens,* Küçükkuyu, occurence, morphometry, description.

Türkiye'nin Kuzey Ege Denizi, Edremit Körfezi'nde Dikenli Yılan Balığı, *Ophisurus serpens'in* Onaylanan Bulunuşu

Özet

15 Ocak 2014 tarihinde Edremit Körfezi, Küçükkuyu açıklarında 40 m. derinlikten dikenli yılan balığı, *Ophisurus serpens' in* olgun bir dişi bireyi uzatma ağıyla yakalanmıştır. Tür daha önce Ege Denizi'nin güneyi ve Doğu Akdeniz'den rapor edilmiştir. Türkiye'nin Kuzey Ege Suları için nadir olan bu türün başlıca morfometrik ve meristic karakterleri verilmiştir.

Anahtar Kelimeler: *Ophisurus serpens,* Küçükkuyu, Bulunuş, Morfometri, Tanım.

Introduction

The longjaw snake eel, *Ophisurus serpens* (Linnaeus 1758) is a member of the family Ophichthidae which are widely distrubited in the eastern Atlantic coast, from the Bay of Biscay (Cappetta *et al*., 1985) to South Africa (McCosker and Castle, 1986) and represented by 8 species belonging to 49 genera (Bauchot, 1986). *Ophisurus serpens* is also reported elsewhere, such as in western Indian Ocean (Southern Mozambique to South Africa) and western Pacific (Japan and Australia) (Bauchot, 1986). It is marine, bethic species living to dephts of 300-400 m according to Fishbase (May and Maxwell, 1986). This species inhabits the continental shelf on sand or mud bottom, buried with only its head exposed, looking for preys as a carnivorous fish (Leiby, 1990; Biachi *et al*., 1990) and also found in estuaries (May and Maxwell, 1986). This species was first listed from Galician waters by López-Seoane (1866), without any description or data in Banon *et al*. (2011). After about one hundred year, longjaw snake eel was also reported in Western and Central Mediterranean Sea by Tortonese (1970) and Bauchot (1986). *O. serpens* was also reported off the Tunisian coast by Ben Amor *et al*. (2009) while Dulcic *et al*. (2005) pointed out from Adriatic waters. This species was also recorded in Galician Waters (Banon *et al*. 2011). As to Turkish Seas, Mater and Meriç (1996), Mater and Bilecenoglu (1999) and Bilecenoglu *et al*. (2002) reported this species from Aegean Sea and Mediterranean Sea. But, they did not mention exactly the area where the species was caught. Filiz and Bilge (2004) and Sangun *et al*. (2007) also gave the lenght-weight relationship of *O.serpens* from Sıgacık Bay and the north-eastern Mediterranean coast of Turkey, respectively. Ulas and Akyol (2015) presented the occurence of the serpent eel next to Bay of İzmir while Filiz *et al*. (2015) recorded the species from South Aegean Sea, Turkey.

The aim of this paper to give first data on the morphometric and meristic characters of this species for Edremit Bay, northern Aegean Sea.

Materials and Methods

One mature female specimen of *Ophisurus serpens* was caught by long-line at 40 m depth, off Küçükkuyu, Edremit Bay (39°33′N 26°37′E and 39.550°N 26.617°E) (Figure 1). The specimen (2000 mm TL) (Figure 2) was identified at species level (Bauchot, 1986). Measurements and counts and were carried out on the fresh specimen, using a digital caliper of 0.05 mm accuracy and binocular microscope. The specimen was stored in the collection of the Hydrobiology Museum of Balıkesir University, with catalogue number HMBAU102.

Results

Total length of one specimen was 2000 mm (Table 1). Its body is very elongate and cylindrical, snout long and conical with the upper jaw projecting. Jaws elongate and slender, Teeth large caniniform and more or less curved enlarge on on premaxillae, small and biserial on maxillae. Small and uniserial teeth on lower jaw. Vomerine teeth uniserial, enlarged anteriorly. Anterior nostril small at midsnout. Posterior nostril a long opening covered by an upper flap, located on outer lip at midway between anterior

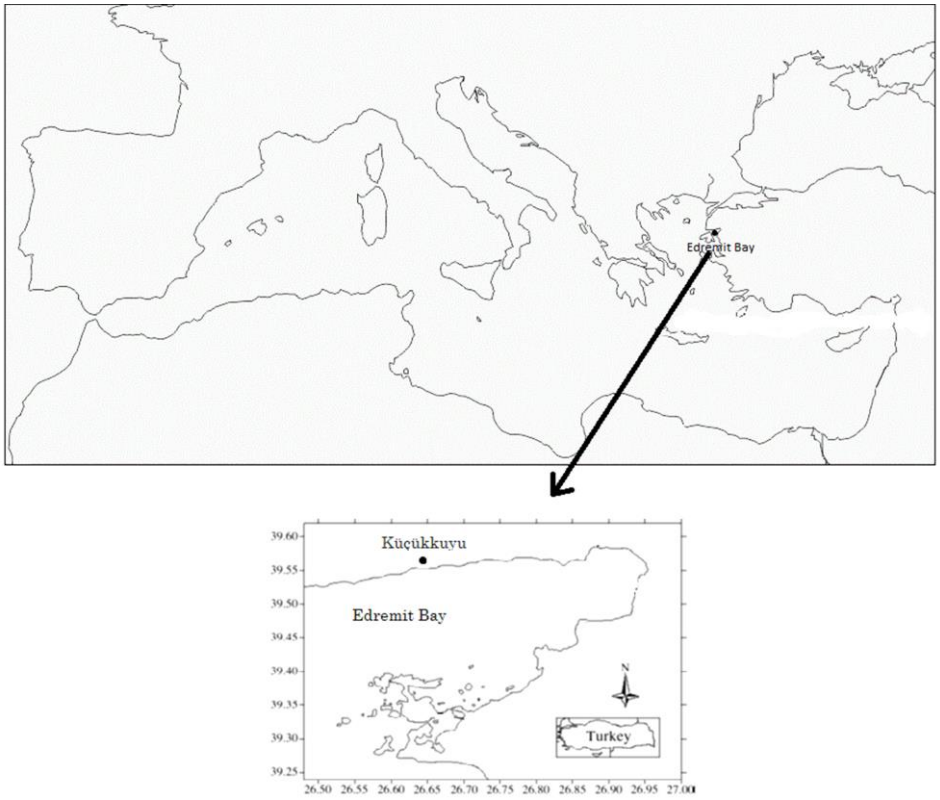

Figure. 1. Map of the studied area.

Figure 2. *Ophisurus serpens*, 2000 mm TL, caught off Küçükkuyu, Edremit Bay.

Table 1. Morphometric (mm) and meristic features carried out in *Ophisurus serpens* specimen captured on January 2014 at 40 m depth, Edremit Bay. Morphometric measurements also given as proportions of total and head lengths

Morphometric and meristic characters	*Ophisurus serpens*					
	Bauchot (1986)	Dulcic *et al*. (2005)	Ben Amor *et al*. (2009)	Banon *et al*. (2011)	Banon *et al*. (2011)	This study (2014)
Total length (L_T)	2400	2130	333	1680	1850	2000
Preanal distance, (%L_T)		770(36.2%L_T)	143 (42.9%L_T)	663(39.5% L_T)	715(37.4% L_T)	750(37.5%L_T)
Predorsal distance (%L_T)		220(10.3% L_T)	48 (14.4% L_T)	173(10.3% L_T)	195(10.5% L_T)	250(12.5% L_T)
Prepectoral distance (%L_T)		160(7.5% L_T)	31(9.3% L_T)	131(7.8% L_T)	146 (7.9% L_T)	170(8.5% L_T)
Dorsal fin length		1860(87.3% L_T)	225 (67.6% L_T)	1487(88.5% L_T)	1615(87.3% L_T)	1700(85.0% L_T)
Anal fin length		1300(61.0% L_T)	177 (53.2% L_T)	989(58.9% L_T)	1110(60.0% L_T)	1220(61.0% L_T)
Pectoral fin length		40(1.9% L_T)	5(1.5% L_T)	30(1.8% L_T)	33(1.8% L_T)	37(1.9% L_T)
Body depth (%L_T)		65(3.1% L_T)	8(2.4% L_T)	46(2.7% L_T)	51(2.8% L_T)	35(1.8% L_T)
Head length (%L_T)		155(7.3% L_T)	42(12.6% L_T)	125(7.4% L_T)	138(7.5% L_T)	152(7.6% L_T)
Eye diameter (%L_H)		12(7.7% L_H)	2(4.8% L_H)	10(0.6% L_T)	11(0.6% L_T)	10(6.6% L_H)
Preorbital distance (%L_H)		54(34.8% L_H)	4(9.5% L_H)	34(2.0% L_T)	41(2.2% L_T)	49(32.2% L_H)
Interorbital distance, mm (%L_H)		18(11.6% L_H)	3(7.1% L_H)	13(0.8% L_T)	14(0.8% L_T)	11(7.2% L_H)
Pectoral fin rays	14-16	-	-	-	-	15
The number of pores in linea lateralis	199-215	202	149	195	198	206
Lateral line (prepectoral)	7-10	-	-	9	9	8-9
Lateral line (preanal)	70-77	-	-	-	-	73
The length of lower jaw	-	83	20	-	-	96

nostril and anterior edge of eye. Eyes relatively small. Dorsal and anal fins well developed; dorsal fin origin slightly behind the pectoral fins. Dorsal and anal fins ending near to the hardened caudal tip. Body coloration reddish-brown dorsally, yellowish-white ventrally; snout light ochre; dorsal and anal fins edged with grey; lateral and cephalic pores blackish.

Meristic measurements and counts are summarized in Table 1 and were in agreement with the relevant literature, except for the Tunisian snake eel, 333 mm TL which was a juvenile specimen (Ben Amor *et al*. 2009). Regarding the maximum size of *Ophisurus serpens*, Bauchot (1986) reported 2.40 m for the Mediterranean specimens and McCosker and Castle (1986) gave the maximum total length for the south African ones as 2.50 m. The number of pores in linea lateralis for the specimen from the Edremit Bay is 206 while they are reported as 173 pores by Jardas, 1996 in Dulcic *et al*. (2005).

Table 1 Morphometric (mm) and meristic data of *Ophisurus serpens* captured on January 2014 at 40 m depth, off Küçükkuyu, Edremit Bay. Morphometric measurements also given as proportions of total and head lengths.

Discussion

One female specimen was 2000 mm in total length. The morphometric measurements and meristic counts (Table 1) were in agreement with the previous descriptions of the species (Bauchot, 1986; Dulcic *et al*., 2005).

According to Aksiray (1987) and Louisy (2002), *O.serpens* is very rare in Mediterranean Sea and Turkish Seas. This can be attributed to a case of catching only by long line and burrowing of specimens in sandy and muddy bottoms (Dulcic *et al*., 2005).

Edremit Bay, in the northern Aegean Sea, is a place where two currents meet and it is rich in plankton because of upwelling. In addition, the area is suitable for fishing and is fed by waters rich in nutrient from erosion through the vicinity of the bay and the Black Sea (Togulga, 1997). It is expected that Edremit Bay is the focus of a pilot project of Artificial Reefs Fisheries Resource Conservation and Development under the Turkish National Artificial Reefs Master Plan which was deployed in April, 2011 (http://GfcmWebSite/SAC/SCMEE/2013/ArtificialReefs/FinalReport), primarily by Republic of Turkey Ministry of Food, Agriculture and Livestock that will supply efficient resources for fish-spawning and nursery areas and a colonization of fish species previously unknown in the area and conservation of biodiversity, especially in the littoral zone from illegal fisheries (Tunca *et al*., 2013). Such a project may provide necessary resources for fishes not only to establish these waters, but probably to develop and reproduce.

As seen Figure 3, the northward distribution of warm water species such as *O. serpens* in the Mediterranean Sea is not a single event and an ongoing process. This spread can be correlated to the increase in sea water temperatures.

The present record constituted the northernmost extension range of *O*. serpens from the Mediterranean Sea.

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