

# New Distribution of the Serpent Eel *Ophisurus serpens* (Linnaeus, 1758) in Eastern Mediterranean: First Record from the Syrian Marine Waters

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## Abstract

*Ophichthidae* species (snake eels) spread from tropical to sub-tropical waters and inhabit sandy substrate. They have tall body, big head, long snout and pointed teeth. This family possesses 318 species. On 19/5/2019, a field trip was performed in the marine waters facing Banyas city, Syria. A specimen of the serpent eel *Ophisurus serpens* (Linnaeus, 1758) was caught at a depth of ~220 m. This study reveals that the serpent eel *Ophisurus serpens* has been recorded for the first time in the Syrian marine waters. Several factors such as climate changes in the Mediterranean Sea may have led this species to migrate into the area.

**Keywords:** *Ophichthidae*, *Ophisurus serpens* Syrian marine waters, Eastern Mediterranean, climate changes

## I. INTRODUCTION

*Ophichthidae* species (snake eels) spread from tropical to sub-tropical waters and inhabit sandy substrates [1]. They have tall body, big head, long snout and pointed teeth. This family possesses 318 species [2], and have been represented in the Mediterranean by ten species: [*Apterichtusanguiformis* (Peters, 1877); *Apterichtus caecus* (Linnaeus, 1758); *Dalophis imberbis* (Delaroche, 1809); *Echelus myrus* (Linnaeus, 1758); *Mystriophis crosnieri* Blache, 1971; *Ophichthus maculatus* (Rafinesque, 1810); *Ophichthus ophis* (Linnaeus, 1758); *Ophichthus rufus* (Rafinesque, 1810); *Ophisurus serpens* (Linnaeus, 1758); *Pisodonophis semicinctus* (Richardson, 1848); [1, 2]. Most of these species occur in the western Mediterranean [3], and only two exist in the eastern Mediterranean [2]. The serpent eel *Ophisurus serpens* (Linnaeus, 1758) which is found in the western Mediterranean [4], had been reported only in two zones of the eastern Mediterranean [Egyptian [5] and Turkish [6] zones]; It had not been previously recorded in the Syrian marine waters [7]. This paper reveals that *O. serpens* has been recorded for the first time in the Syrian marine waters.

## II. METHODS AND MATERIALS

On 19/5/2019, a field trip was performed in the marine waters facing Banyas city, Syria (N: 35°14'35.11", E: 35°55'12"; Fig.1). Fish samples were collected using fixed gillnet (18mm mesh size, 3m height, 200m length: with duplicates), above a sandy mud bottom, with assistance of fishing boat (9.5m, 19HP). The morphometric measurements (length to the nearest mm, weight to the nearest g), and meristic counts were recorded. The fish was identified according to [1]. It was then photographed, and preserved in 7% formaldehyde and placed at the Biological Laboratory of the High Institute of Marine Research (Tishreen University - Lattakia, Syria) as a reference sample.

## III. RESULT

A specimen of the serpent eel *Ophisurus serpens* (Linnaeus, 1758) (fig 2) was caught at a depth of ~220 m. It had the following morphological characteristics: the body is long and cylindrical with long snout and small eye compared to the head. The dorsal and the anal fins are almost continuous to the end of the body. The jaws are slender, elongate and have canines in the front, and a row of teeth in each jaw. The pectoral fins are present but the pelvic ones are absent. The dorsal side of the body is greenish brown, the ventral side is pearly white, and the iris is yellow. The margins of the dorsal, anal and caudal fins are dark. These features of the serpent eel *O. serpens* are in full agreement with [1]. The Morphometric measurements are shown in Table (1).

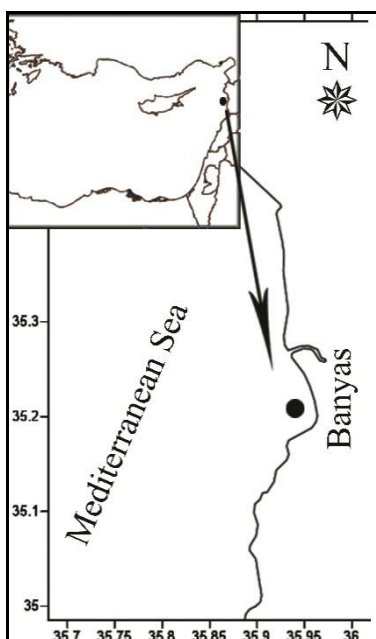


Fig 1: A map showing the collection site of *O. serpens* specimen



Fig 2: A specimen of the serpent eel *O. serpens* was caught on 19-5-2019 from the marine water of Syria.

Table (1): Morphometric and biometric characteristics of *O. serpens* was caught from the marine water of Syria.

Factors	Morphometric measurement (mm or g)
Total length	1975
Body depth	43
Head length	148
Eye diameter	9
Snot length	66
Upper jaw length	37
Lower jaw length	79
Dorsal fin length	1735
Anal fin length	1314
Pre-dorsal length	217
Pre-anal length	639
Total weight	1050

#### IV. DISCUSSION

The serpent eel *O. serpens* is a native species to many parts of the world, distributed in Atlantic and Indo-Pacific Oceans [6]. It is common in the western Mediterranean, both in the European and African

coasts [3, 4]; It has also been recorded previously only in the Egyptian and Turkish coasts of the eastern Mediterranean. Several factors may had made this area suitable to accommodate this species; Climate changes and changes in Seawater quality may account for such accommodation [8-13]. The presence of this species in the Syrian coast fills the gap in this species distribution along the eastern Mediterranean coast and provides further evidence of the exotic species continuous invasion into the area [14-17]. In addition to its effect on the marine biodiversity, any establishment of this species in the area would have adverse consequences because it is undesirable to consumers and consequently unprofitable to fishermen. Similarly, food and space competitions with local species may be the other consequences [18-20]. This calls for effective and strong collaboration at regional and international levels to manage species migration into the area [8, 21] and to protect local fish stocks [17, 22, 23,24].

#### V. CONCLUSION

This study reveals that the serpent eel *Ophisurus serpens* has been recorded for the first time in the Syrian marine waters. Several factors such as climate changes in the Mediterranean Sea may had led this species to migrate into the area.

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