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OCCURRENCE OF SLOANE'S VIPERFISH *CHAULIODUS SLOANI*
(OSTEICHTHYES: CHAULIODONTIDAE) FROM THE TUNISIAN COAST
(CENTRAL MEDITERRANEAN)

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ABSTRACT

This paper reports the occurrence of Sloane's viperfish Chauliodus sloani Schneider, 1801, from the Tunisian coast. Two specimens were collected by shrimp trawl during a scientific survey carried out in the northern area of the country. The specimens were caught in deep waters, at a depth of 410 m. The lack of knowledge of this species in the Mediterranean is probably due to the fact that it occurs in deep sea areas and is of little commercial interest.

Key words: description, morphometric measurements, meristic counts, distribution, deep waters

RITROVAMENTO DI PESCE VIPERA *CHAULIODUS SLOANI* (OSTEICHTHYES:
CHAULIODONTIDAE) LUNGO LA COSTA DELLA TUNISIA (MEDITERRANEO
CENTRALE)

SINTESI

L'articolo riporta il ritrovamento del pesce vipera Chauliodus sloani Schneider, 1801, lungo la costa tunisina. Due esemplari sono stati catturati con una rete a strascico per gamberi durante una spedizione scientifica effettuata nella parte settentrionale del paese. Gli esemplari sono stati catturati a 410 m di profondità. La mancanza di dati inerenti questa specie nel mare Mediterraneo è probabilmente dovuta al fatto che vive in acque molto profonde e ha scarso interesse commerciale.

Parole chiave: descrizione, misure morfometriche, conteggi meristici, distribuzione, acque profonde

INTRODUCTION

According to Gibbs (1984), two species of the genus *Chauliodus* Schneider, 1801, occur in the FNAM area: the Dana viperfish, *Chauliodus danae* Regan and Trewavas, 1929, only known in the eastern Atlantic, and Sloane's viperfish *Chauliodus sloani* Schneider, 1801, widely distributed in the Pacific, Indian and Atlantic Oceans, but also found in the Mediterranean Sea.

C. sloani has been previously recorded in the western Mediterranean Basin, especially in the seas surrounding Italy (Tortonese, 1970) and the Adriatic Sea (Lipej & Dulcic, 2010). Further investigations have reported the occurrence of this species eastwards, in the Greek waters of the Aegean Sea (Papaconstantinou, 1988), southwest off Cyprus (Galil, 2004), and in the Turkish waters of the Levant Sea (Dalyan & Eryilmaz, 2008).

C. sloani was noted as very rare off the Algerian coast by Dieuzeide *et al.* in 1954, and no new record has been observed since (Hemida, pers. com., 2017). Bradai *et al.* (2004) reported the species occurrence off northern Tunisian coast, but no specimen was available for confirmation. The *C. sloani* specimens described herein were collected during a scientific expedition of the Hannibal vessel organized by the Institut des Sciences et Technologies de la Mer of Salammbô (Tunisia). The paper also provides comments about the species' distribution in the local area and in the Mediterranean Sea.

MATERIAL AND METHODS

The two specimens were collected on 12 July 2017, with a shrimp trawl, at a depth of 410 m, on soft bottom, at the locality 37°33'08" N and 09°45'49" E (Fig. 1), together with other teleost species, the elasmobranch small-spotted catshark *Scyliorhinus canicula* (Linnaeus, 1758) and the deep-water rose shrimp *Parapenaeus*

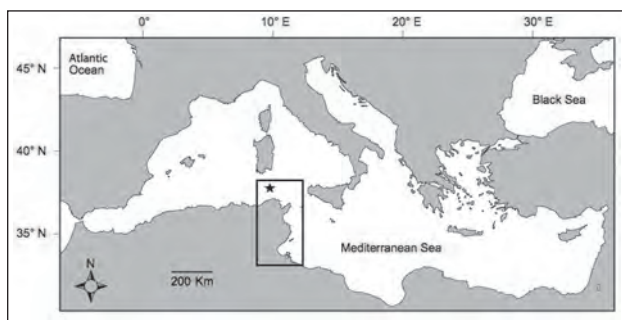


Fig. 1: Map of the Mediterranean Sea showing Tunisia (rectangle) and indicating the capture site (black star) of the two specimens of *Chauliodus sloani* in the northern region.

Sl. 1: Zemljevid Sredozemskega morja z Tunizijo (pravokotnik) in označbo lokalitete (črna zvezdica), kjer sta bila ujeta primerka *Chauliodus sloani* na severu države.



Fig. 2: *Chauliodus sloani*, northern Tunisian region. A. Specimen referenced INSTM Chau-slo 01. B. Specimen referenced INSTM Chau-slo 02, scale bar for both specimens = 35 mm.

Sl. 2: *Chauliodus sloani*, Severna Tunizija. A. Primerek s kataloško številko INSTM Chau-slo 01. B. Primerek s kataloško številko INSTM Chau-slo 02, merilo za oba primerka = 35 mm.

longirostris (Lucas, 1846). The fresh specimens were measured for total length (TL), standard length (SL) and all morphometric characters to the nearest millimetre, and weighed to the nearest gram, on board. They were delivered to the laboratory for morphometric measurements and counts of meristic characters, which are summarized in Table 1. Both specimens were fixed in 10 % buffered formaldehyde, preserved in 75% ethanol and deposited in the Ichthyological Collection of the Institut des Sciences et Technologies de la Mer of Salammbô (Tunisia), under the catalogue number INSTM Chau-slo 01 and INSTM Chau-slo 02, respectively, and finally described in the present paper (Fig. 2) following Bello *et al.*'s (2014) protocol.

RESULTS AND DISCUSSION

The specimens were identified based on the following combination of characters: body long and compressed, covered by hexagonal scales on sides, with two ventro-lateral rows of photophores; head short with a minuscule snout, jaws with long fangs, numerous large teeth on premaxilla and dentary, lower jaw longer than the upper, dorsal fin close to head, first spinous ray prolonged, its origin over the eighth photophore in lateral series, pre-dorsal length; length from snout to dorsal fin 23.8/23.9 % of standard length (SL), dorsal adipose fin present near tail, colour iridescent silver-blue. The description, colour, all measurements and counts are in total agreement with Tortonese (1970), Gibbs (1984) and Dalyan & Eryilmaz (2008). Therefore, these two findings constitute the first well-documented record of the species in Tunisian waters, and *Chauliodus sloani* can be added to the list of local ichthyofauna.

C. sloani can be distinguished from its co-generic species *C. danae* by its predorsal fin closer to head 17-28% (usually 21-24%) SL *versus* in *C. danae*, 24-33% (usually 26-28%) SL. The origin of dorsal fin in *C. sloani* is over the fourth to eighth photophore in lateral series, and over the ninth to eleventh photophore in lateral series in *C. danae*. Additionally, *C. sloani* reaches a larger size than *C. danae*, more than 300 mm SL *versus* about 150 mm SL (Gibbs, 1984). The size of both Tunisian specimens, 226 mm SL and 160 mm SL, respectively, strengthens our diagnosis and confirms the occurrence of *C. sloani* in local waters.

In the wake of the local ecological knowledge following Anadón *et al.* (2009), used to track the geo-

graphical distribution of rare species in their living areas (Azzurro *et al.*, 2011), information was gathered through contacts with fishermen, SCUBA divers, and sea lovers, concomitantly with regular surveys of Tunisian fish markets. These investigations showed that *Chauliodus sloani* was poorly known in the region prior to this capture. This could be due to the fact that the species inhabits waters of more than 1000 m in depth, and deep bottoms are little exploited by commercial vessels or not at all. Also, the species is not appreciated by consumers and therefore of no economic interest. This means that only scientific research offers the possibility to capture such a species in Tunisia, which is probably the case throughout the Mediterranean Sea.

Tab. 1: The morphometric measurements in mm and as percentages of standard length (SL %), meristic counts and weight recorded in the two specimens of *Chauliodus sloani* from the northern Tunisian region.

Tab. 1: Morfometrične meritve v mm in kot delež glede na standardno dolžino telesa (SL %), meristično štetje in teža dveh primerkov vrste *Chauliodus sloani* iz severne Tunizije.

| References | INSTM Chau-slo 01 | | INSTM Chau-slo 02 | |
|------------------------------|-------------------|-------|-------------------|-------|
| | mm | %SL | mm | %SL |
| Morphometric measurements | | | | |
| Total length (TL) | 251 | 111.1 | 174 | 108.8 |
| Standard length (SL) | 226 | 100 | 160 | 100 |
| Head length | 30 | 13.3 | 24 | 15 |
| Eye diameter | 6 | 2.6 | 5 | 3.1 |
| Preorbital length | 10 | 4.4 | 7 | 4.4 |
| Predorsal length | 54 | 23.9 | 38 | 23.8 |
| Preventral length | 98 | 43.4 | 83 | 51.9 |
| Preanal length | 191 | 84.5 | 147 | 91.9 |
| Prepectoral length | 40 | 17.7 | 30 | 18.8 |
| Dorsal fin base | 13 | 5.8 | 11 | 6.9 |
| Ventral fin base | 7 | 3.1 | 6 | 3.8 |
| Pectoral fin base | 4 | 1.8 | 3 | 1.9 |
| Anal fin base | 18 | 8 | 16 | 10 |
| Adipose fin base | 16 | 7.1 | 12 | 7.5 |
| Meristic counts | | | | |
| Dorsal fin rays | 6 | | 6 | |
| Anal fin rays | 10 | | 10 | |
| Pectoral fin rays | 12 | | 12 | |
| Pelvic fin rays | 7 | | 7 | |
| Caudal fin rays | 11 | | 11 | |
| Number of photophores | 8 | | 8 | |
| Number of teeth in upper jaw | 8 | | 8 | |
| Number of teeth in lower jaw | 14 | | 14 | |
| Total body weight (g) | 19.5 | | 9.5 | |

O POJAVLJANJU MORSKEGA GADA *CHAULIODUS SLOANI* (OSTEICHTHYES: CHAULIODONTIDAE) V TUNIZIJSKIH VODAH (OSREDNJE SREDOZEMSKO MORJE)

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POVZETEK

Avtorji poročajo o pojavljanju morskega gada, *Chauliodus sloani* Schneider, 1801, iz tunizijskih voda. Na strokovnih vzorčenjih sta bila na globini 410 m pri lovu kozic ujeta dva primerka na severu države. Pomanjkanje podatkov o tej vrsti je najverjetneje posledica dejstva, da se pojavlja v globokomorskem okolju, poleg tega pa ima zanemarljiv komercialni interes.

Ključne besede: opis, morfometrične meritve, meristična štetja, razširjenost, globokomorsko okolje

REFERENCES

- Anadón, J.D., A. Gimenez, R. Ballestar & I. Perez (2009): Evaluation of local ecological knowledge as a method for collecting extensive data on animal abundance. *Conserv. Biol.*, 23 (3), 617-625. DOI: 10.1111/j.1523-1739.2008.01145.x
- Azzurro, E., P. Moschella & F. Maynou (2011): Tracking signals of change in Mediterranean Fish diversity based on local ecological knowledge. *PLoS ONE*, 6 (9), e24885. <https://doi.org/10.1371/journal.pone.0024885>
- Bello, G., R. Causse, L. Lipej & J. Dulčić (2014): A proposal best practice approach to overcome unverified and unverifiable «first records» in ichthyology. *Cybium*, 38 (1), 9-14.
- Bradai, M.N., J.P. Quignard, A. Bouain, O. Jarboui, A. Ouannes-Ghorbel, L. Ben Abdallah, J. Zaouali & S. Ben Salem (2004): Ichtyofaune autochtone et exotique des côtes tunisiennes: Recensement et biogéographie. *Cybium*, 28 (4), 315-328.
- Dalyan, C. & L. Eryilmaz (2008): A new deepwater fish, *Chauliodus sloani* Bloch and Schneider, 1801 (Osteichthyes: Stomiidae), from the Turkish waters of Levant Sea (Eastern Mediterranean). *J. Black Sea/ Medit. Environ.*, 14 (1), 33-37.
- Dieuzeide R., M. Novella & J. Roland (1954): Catalogue des poissons des côtes algériennes, Volume II. *Bull. Sta. Aquic. Pêche, Castiglione nov. Sér.*, 5, 1-258.
- Gibbs, Jr R.L. (1984): *Chauliodontidae*. pp. 336-337. In: Whitehead P.J.P., Bauchot, M.L., Hureau J.C., Nielsen J. & Tortonese, E. (eds), *Fishes of the North-western Atlantic and the Mediterranean*. Vol I. UNESCO, Paris.
- Galil, B.S. (2004): The limit of the sea: the bathyal fauna of the Levantine Sea. *Scient. Mari.*, 68 (Supplement 3), 63-72.
- Lipej, L & J. Dulčić (2010): Checklist of the Adriatic Sea fishes. *Zootaxa*, 2859, 1-92.
- Papaconstantinou, C. (1988): *Fauna Graeciae, IV Pisces*. Check-list of Marine Fishes of Greece. National Center for Marine Research, Hellenic Zoological Society, Athens, Greece.
- Tortonese, E. (1970): *Osteichthyes: pesci ossei*. [Osteichthyes bony fishes.]. Calderini, Bologna, Italy. [In Italian]