received: 2019-10-24 DOI 10.19233/ASHN.2019.23

UNUSUAL RECORD OF ROUND FANTAIL STINGRAY *TAENIUROPS GRABATA* (CHONDRICHTHYES: DASYATIDAE) FROM THE TUNISIAN COAST (CENTRAL MEDITERRANEAN SEA)

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ABSTRACT

This paper reports the capture of a specimen of round fantail stingray Taeniurops grabata *(Geoffroy Saint-Hilaire, 1817) on the northern coast of Tunisia, caught in deep waters, at a depth of 450 m. It was a large specimen of 1.12 m in disc width, 2.70 m in total length and 110 kg in total body weight. This is the largest and heaviest specimen known to date in Tunisian waters, and probably in the Mediterranean and even outside it. Additionally, comments are given about the distribution of the species, well-known in the eastern Mediterranean Basin and eastern tropical Atlantic, but unknown in the western Mediterranean Basin.*

Key words: Dasyatidae, distribution, expansion range, Mediterranean Sea, eastern tropical Atlantic

RITROVAMENTO INUSUALE DI TRIGONE AFRICANO *TAENIUROPS GRABATA* (CHONDRICHTHYES: DASYATIDAE) LUNGO LA COSTA DELLA TUNISIA (MEDITERRANEO CENTRALE)

SINTESI

L'articolo riporta la cattura di un esemplare di trigone africano, Taeniurops grabata *(Geoffroy Saint-Hilaire, 1817), lungo la costa settentrionale della Tunisia, catturato in acque profonde, ossia a 450 m di profondità. L'esemplare era molto grande, con 1,12 m di larghezza del disco, 2,70 m di lunghezza totale e 110 kg di peso corporeo totale. Si tratta dell'esemplare più grande e più pesante ritrovato fino ad oggi nelle acque tunisine, e probabilmente anche nel Mediterraneo e al di fuori di esso. Gli autori inoltre discutono la distribuzione della specie, ben nota nel bacino del Mediterraneo orientale e nell'Atlantico tropicale orientale, ma sconosciuta nel bacino del Mediterraneo occidentale.*

Parole chiave: Dasyatidae, distribuzione, area di espansione, mare Mediterraneo, Atlantico tropicale orientale

INTRODUCTION

Round fantail stingray *Taeniurops grabata* (Geoffroy Saint-Hilaire, 1817) is found off the west African coast from Mauritania to Angola, around the Sào Tiago and Cape Verde Islands (Capapé & Desoutter, 1990). It has also been reported from the Azores Islands, where large free-swimming specimens were observed in the wild in shallow coastal waters (Barreiros, *pers. comm.*, 2019). *T. grabata* occurs throughout southeastern Mediterranean (McEachran & Capapé, 1984), especially from Turkish waters (Bilecenoglu *et al.,* 2014) to the Levant Basin (Golani, 2005), with the Syrian coast constituting to date the easternmost extension of its range (Ali *et al.*, 2013).

Taeniurops grabata has been reported in southern Tunisia, mainly in the Gulf of Gabès where a viable population appears to be successfully established (Capapé, 1989; Bradai *et al.*, 2004). However, more recently, Boudaya *et al.* (2018) studied parasitic infestation occurring in specimens captured off Bizerte, a city located in northern Tunisia. Additionally, a large specimen of *T. grabata* was captured from the same area and landed at the fish market of Zarzouna-Bizerte, where it was observed and photographed. This specimen is described in the present paper and some comments are given about the species distribution in the local area, the Mediterranean Sea and in the eastern tropical Atlantic.

MATERIAL AND METHODS

On 28 September 2019, a female specimen of *Taeniurops grabata* was caught by biface bottom trawl in the coastal waters of northern Tunisia, off Bizerte at 37° 40′ N and 9° 90′ E (Fig. 1). The capture occurred at a depth of 450 m, on soft bottom, unfortunately no information was provided about the associated fauna. Some measurements were recorded to the nearest centimetre (cm) and total body weight to the nearest kilogram (kg). Other morphometric measurement could not be taken, because the specimen was cut into slices after landing to be sold at the fish market of Bizerte; its flesh is appreciated in the preparation and consumption of local dishes.

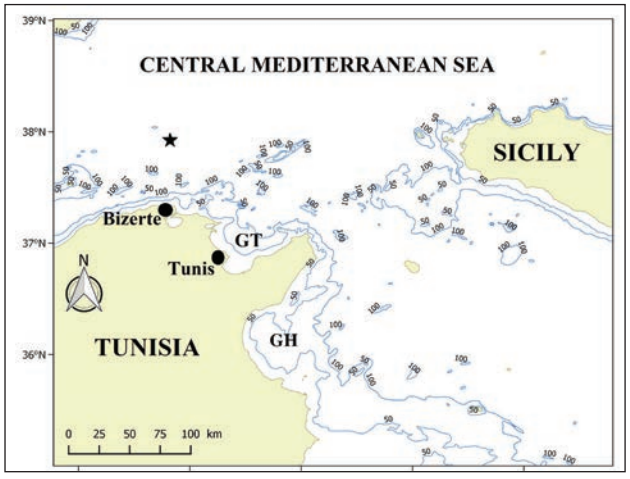

Fig. 1: Map of northern Tunisia with the black star indicating the capture site of *Taeniurops grabata*. ***GT = Gulf of Tunis; GH=Gulf of Hammamet.***
Sl. 1: Zemljevid severne Tunizije s črno zvezdico, ki označuje lokaliteto ulova vrste *Taeniurops grabata*. ***GT = tuniški zaliv; GH=hamameški zaliv.***

RESULTS AND DISCUSSION

The specimen was identified as *Taeniurops grabata* following Mc Eachran & Capapé (1984): disc rather circular, broader than long, tail short and compressed, with a membranous fold below; dorsal surface almost entirely rugose, with a row of spines from the middle of the disc to the spine; dorsal surface brown with dark blotches and irregular vermiculation, belly beige (Fig. 2).

McEachran & Capapé (1984) noted that the maximum disc width of *T. grabata* could reach 1 m, in total agreement with specimens recorded by Capapé (1989) from the Gulf of Gabès. The present specimen measured 1.12 m in disc width, 2.7 m in total length, and its total body weight reached 110 kg. This is therefore that largest and heaviest *Taeniurops grabata* recorded to date in Tunisian waters, probably throughout the Mediterranean and even outside this sea. Large elasmobranch species, generally sharks, occur off the northern coast of the Tunisian transitional area between the eastern and western basins (Soufi-Kechaou *et al.*, 2018; Capapé *et al.*, 2018), but this was the first time that as large a batoid species as *T. grabata* was found there, and furthermore, in deep waters. This species generally inhabits shallow coastal waters, not exceeding 50 m (Capapé, 1989). This capture of *T. grabata* at a depth of 450 m is rather unusual, probably occasional, but it could also explain the rarity of the species in deep areas that are poorly exploited by fisheries.

Taeniurops grabata used to be considered as a species having tropical affinities and only found in southern Tunisian regions (Postel, 1956). Conversely, Boudaya *et al.* (2018) studied parasitic infestation occurring in specimens of *T. grabata* captured northward from Bizerte. Such occurrence was probably due to migration toward northern regions. Similar patterns were reported for other elasmobranch species previously unknown in this latter area (El Kamel *et al.*, 2009; El Kamel-Moutalibi *et al.*, 2014; Rafrafi-Nouira *et al.*, 2015, Rafrafi-Nouira, 2016; Soufi-Kechaou *et al.*, 2018). These migrations are likely owed to the warming of the Mediterranean waters, including the Tunisian coast, due to global climate change (Francour *et al.*, 1994). Additionally, the present capture of a large specimen indicates that the occurrence of a northern population of *T. grabata* cannot be totally ruled out. It could be also considered as the species' northwesternmost extent of habitat range in the

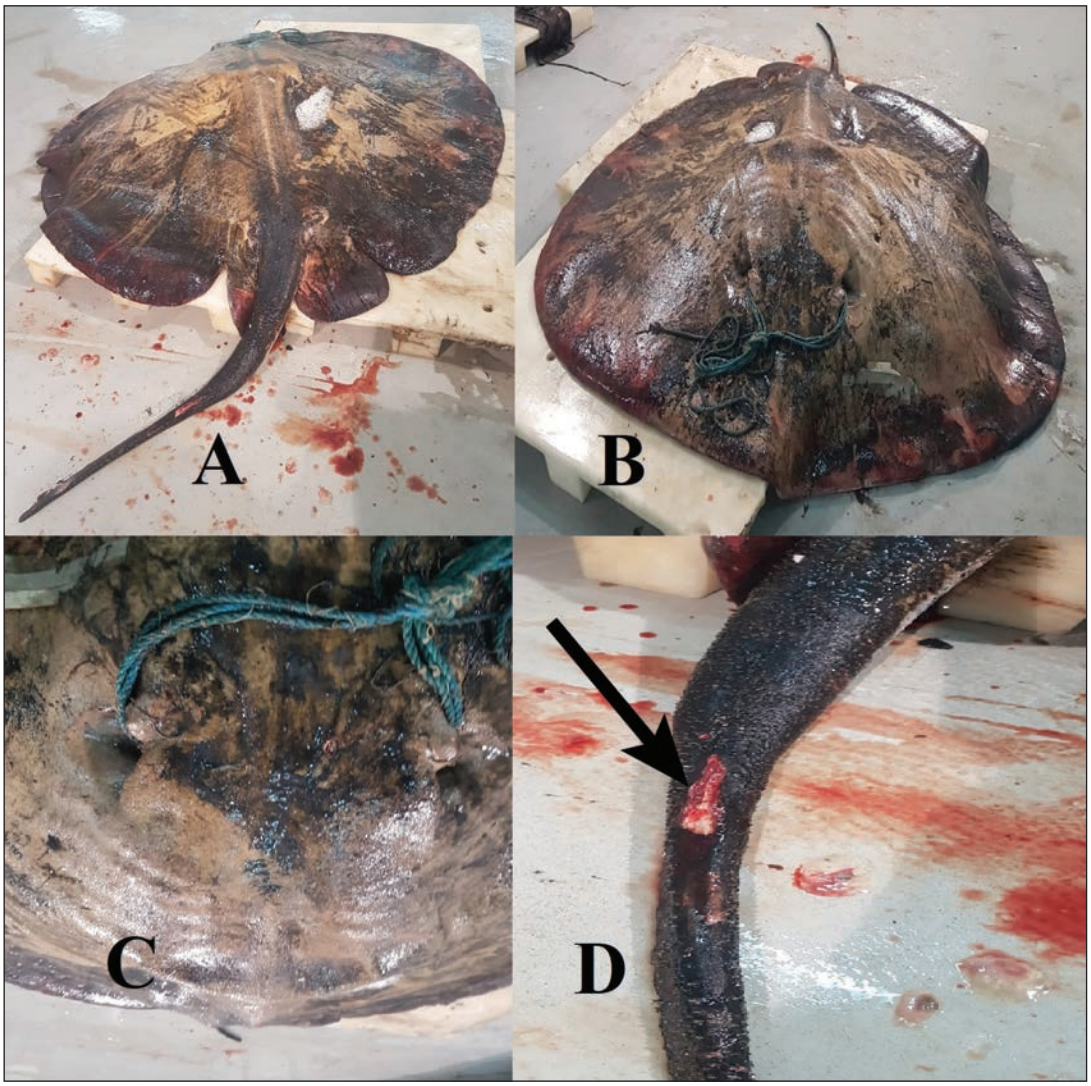

Fig. 2: The** Taeniurops grabata **captured from the northern coast of Tunisia. Dorsal surface = A. posterior view, B. anterior view, C. anterior margin view. D. tail, black arrow indicating the place of the sting removed by fishermen.
Sl. 2: Primerek vrste** Taeniurops grabata**, ujet ob severni tunizijski obali. Zgornja površina - A. pogled od zadaj, B. pogled od spredaj, C. pogled sprednjega roba. D. rep, črna puščica označuje predel, s katerega so ribiči odstranili trn.

Mediterranean Sea, as the species does not occur in the western Basin (Mc Eachran & Capapé, 1984) and is not reported northward off the coast of France (Capapé *et al*., 2006). Additionally, among Maghreb shores, *T. grabata* is unknown off the Algerian coast (Refes et *al*., 2010) and off the Moroccan coast (Lloris & Rucabado, 1998).

Boudaya *et al*. (2018) found the same anthocephalid species in *T. grabata* from the Tunisian coast and in those from the Senegalese coast. Additionally, three species belonging to the monogenean genus *Heterocotyle* Scoot 1904 parasitized the gills of *T. grabata* from these two distinct areas (Neifar *et al*., 1999). Such discoveries suggest that the distribution of *T. grabata* is not really fragmented and that the species' non-occurrence could be due to lack of sampling effort (Boudaya *et al*., 2018). *T. grabata* is known to inhabit shallow coastal waters (Capapé, 1989; Barreiros, *pers. comm*., 2019), however the capture of the studied specimen in deep waters confirms the opinion of Ajmenian & Powers (2014), who noted that batoid species are very mobile and prone to both large latitudinal and vertical migrations. Still, only molecular tools could indicate whether or not different populations of *T. grabata* occur in the Mediterranean Sea and in the eastern tropical Atlantic.

ACKNOWLEDGEMENTS

The authors wish to kindly thank Dr João Pedro Barreiros from the Univeristy of Azores, Portugal for infomation about *Taeniurops grabata* from Azores Islands, and Prof Lassad Neifar and Dr Lobna Boudaya from the University of Sfax, Tunisia for sending an important paper.

NENAVADNI ZAPIS O POJAVLJANJU MORSKEGA BIČA VRSTE *TAENIUROPS GRABATA* (CHONDRICHTHYES: DASYATIDAE) IZ TUNIZIJSKIH VODA (OSREDNJE SREDOZEMSKO MORJE)

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POVZETEK

Avtorji poročajo o ulovu morskega biča vrste Taeniurops grabata *(Geoffroy Saint-Hilaire, 1817) iz globine 450 m ob severni tunizijski obali. Gre za večji primerek, ki je meril 1,12 m v premeru telesnega diska in tehtal 110 kg. To je doslej največji in najtežji zabeleženi primerek te vrste v tunizijskih vodah in verjetno tudi v sredozemskih vodah in širše. Avtorji še razpravljajo o razširjenosti vrste, ki je sicer dobro raziskana v vzhodnem Sredozemskem morju in tropskem delu vzhodnega Atlantika, dokaj neznana pa v zahodnem delu Sredozemlja.*

Ključne besede: Dasyatidae, razširjenost, širjenje areala, Sredozemsko morje, vzhodni tropski Atlantik

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