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First record of *Melichthys niger* (Bloch, 1786) (Pisces, Tetraodontiformes, Balistidae) from the island of Madeira (NE Atlantic Ocean)

With 1 figure and 1 table

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ABSTRACT: The black triggerfish *Melichthys niger* is recorded for the first time from the Island of Madeira. This represents the northernmost record of this species in the eastern Atlantic Ocean and is another example of ongoing tropicalization of Macaronesia.

Keywords: fish diversity, triggerfishes, tropicalization, Macaronesia.

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RESUMO: Neste trabalho, o peixe-porco-preto, *Melichthys niger*, é assinalado pela primeira vez para a ilha da Madeira. Este assinalamento representa o registo mais ao Norte desta espécie tropical no Oceano Atlântico oriental e constitui mais um exemplo da crescente tropicalização da Macaronésia.

Palavras-chave: diversidade ictiológica, peixes-porcos, tropicalização, Macaronésia.

INTRODUCTION

The family Balistidae was, until recently, tentatively represented in the waters of the archipelago of Madeira by five species: *Balistes capriscus* Gmelin, 1789, *Balistes punctatus* Gmelin, 1789, *Balistes vetula* Linnaeus, 1758, *Canthidermis sufflamen* (Mitchill, 1815), and *Canthidermis maculata* (Bloch, 1786) (Wirtz *et al*., 2008; Matsuura, 2016). Of the above mentioned, *B. capriscus* and *C. sufflamen* have specimens deposited in the Funchal Natural History Museum collection (MMF). A specimen *C. maculata* was recently caught in Madeira (photographic proof), thus confirming the presence of the species (Relvas & Wirtz, 2024). Of *B. punctatus* and *B. vetula*, no specimens are known to have been caught in Madeiran waters, therefore the presence of these species, although referred by Matsuura (2016) is doubtful and needs confirmation (Wirtz *et al*., 2008).

The genus *Melichthys* is known by three species, *M. vidua* (Richardson, 1845) from the Indo-Pacific, *M. indicus* Randall & Klausewitz, 1973, from the Red Sea and Indian Ocean and *M. niger* (Bloch, 1786), a circumglobal species in tropical and subtropical seas (30° N - 29° S), being the only species of the genus recorded from the Atlantic Ocean (Randall & Klausewitz, 1973; Matsuura, 2016; Froese & Pauly, 2024).

The present paper reports the presence of *Melichthys niger* for the first time in Madeiran waters. Therefore, the family Balistidae in these waters is now represented by four confirmed species: *B. capriscus*, *C. sufflamen*, *C. maculata*, and *M. niger*.

MATERIAL AND METHODS

One specimen (155 mm SL) caught by a fisherman, was kept frozen and later preserved in the collection of the Funchal Natural History Museum (MMF). A muscle sample was taken and preserved separately in MMF collection. The specimen was identified according to Randall & Klausewitz (1973) and measured following Hubbs (1958) and Randall & Klausewitz (1973). SL, standard length. Morphological characters and measurements taken were chosen according to Randall & Klausewitz (1973). The present work follows the best practice approach to over-come unverified and unverifiable "first records" as proposed by Bello *et al*. (2014).

RESULTS

Melichthys niger (Bloch, 1786) – Black triggerfish

(Fig. 1; Table 1)

Material examined: one specimen, 155 mm SL and weighing 155.5 g (MMF 51432), immature juvenile, caught inside a baited fish trap, ca. 25 m of depth, off Caniçal, southeastern coast of Madeira, on 16/IX/2024. According to fisherman the fish was eating a common pandora, *Pagellus erythrinus* (Sparidae), inside the trap.

Meristic and morphometric characters are shown in Table 1.

Fig. 1 – *Melichthys niger* (MMF 51432) from Madeira. SL 155 mm.

Table 1 – Meristic and morphometric data of *Melichthys niger* (MMF 51432).

Measurements	
Standard length (mm)	155
	% SL
Greatest depth of body	53
Depth at origin of dorsal and anal fins	48
Width of body	16
Head length	29
Snout length	22
Snout to origin of first dorsal fin	32
Snout to origin of second dorsal fin	59
Snout to origin of anal fin	66
Base of second dorsal fin	38
Base of anal fin	33
Interorbital space	10
Eye diameter	6
Length of gill opening	6
Least depth of caudal peduncle	9
Length of caudal peduncle	12
Length of first dorsal spine	16
Length of second dorsal spine	6
Length of longest dorsal ray	14
Length of longest anal ray	14
Length of caudal fin	15
Length of pectoral fin	13

Meristics	
First dorsal fin spines	3
Second dorsal fin rays	34
Anal fin rays	33
Pectoral fin rays	16
Head scale rows *	21
Body scale rows **	58

* Between corner of mouth and lower end of gill opening

** From upper end of gill opening to caudal base

DISCUSSION

All measurements and counts of the studied specimen (Table 1) fall within the species diagnosis given by Randall & Klausewitz (1973), as well as its colour pattern, therefore its correct identification offers no doubts.

Melichthys niger is distributed in the western Atlantic, ranging from North Carolina (USA) to Rio de Janeiro (Brazil), being more common in the Caribbean and the Gulf of Mexico. It is also present on offshore islands such as Bermuda, Fernando Noronha, Saint Peter and Saint Paul Archipelago, and Trindade (GBIF, 2023). In the central and eastern Atlantic, this species is mostly restricted to oceanic islands. It has been recorded from St. Helena and Ascension Islands, being probably the most common fish in the latter (Brown *et al*., 2019), as well as from São Tomé (Osório, 1891) and adjacent African coast (Matsuura, 2016), Cabo Verde Islands (Wirtz *et al*., 2013) and the Canary Islands (Brito *et al*., 2002).

In the Canary Islands, *M. niger* was first reported in 2001 (Falcón *et al*., 2023). This primarily exotic and non-native species is now considered established in the archipelago based on the following criteria: (1) numerous individuals have been observed across a wide spatial scale, and (2) the species displays reproductive behaviour, including the presence of juvenile individuals (J. A. González, *pers. comm*.).

The newly confirmed presence of *M. niger* in Madeira represents the northernmost record of this species in the eastern Atlantic Ocean.

This single catch does not allow us to assume that there is now an established population in Madeira, but it is yet another example of northward range extension of a species with tropical affinities. Long-term monitoring of the coastal fauna is essential to record the occurrence of new species and thus their eventual impacts on previously existent species, in an age of ongoing tropicalization of the marine environment of Macaronesia (Brito *et al*., 2017; Schäfer *et al*., 2019; Castro *et al*., 2021; Schäfer, 2023; González, 2024; González *et al*., 2025).

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