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FIRST RECORD OF RED SEA GOATFISH *PARUPENEUS FORSSKALI* (OSTEICHTHYES: MULLIDAE) FROM TUNISIAN WATERS (CENTRAL MEDITERRANEAN SEA)

Christian CAPAPÉ

Laboratoire d'Ichtyologie, Université de Montpellier, case 104, 34095 Montpellier cedex 5, France
E-mail: capape@univ-montp2.fr

Jeanne ZAOUALI & Khadija OUNIFI-BEN AMOR

Université de Carthage, Institut National Agronomique de Tunisie, 43 avenue Charles Nicolle, 1082-Tunis-Mahrajène, Tunisia, Université de Tunis El Manar, Faculté des Sciences de Tunis, Laboratoire de Biodiversité, Biotechnologie et Changement Climatique, LR11ES09, 1002, Tunis, Tunisia

Mohamed Mourad BEN AMOR

Institut National des Sciences et Technologies de la Mer, port de pêche, 2025 La Goulette, Tunisia

ABSTRACT

*The authors present the first record of a Lessepsian migrant identified as *Parupeneus forsskali* (Fourmanoir & Guézé, 1976) based on an underwater photograph taken by a diver in the waters surrounding the Jerba Island (southern Tunisia). It is the fifth mullid species recorded in the area. The present note provides comments on the distribution of this species.*

Key words: description, distribution, expansion range, Tunisia, central Mediterranean Sea

PRIMA SEGNALAZIONE DI *PARUPENEUS FORSSKALI* (OSTEICHTHYES: MULLIDAE) IN ACQUE TUNISINE (MEDITERRANEO CENTRALE)

SINTESI

*Gli autori presentano il primo ritrovamento di un migrante lessepsiano identificato come *Parupeneus forsskali* (Fourmanoir e Guézé, 1976) in base ad una fotografia subacquea scattata da un subacqueo nelle acque che circondano l'isola di Gerba (Tunisia meridionale). È la quinta specie di mullidi confermata per l'area. La presente nota fornisce commenti sulla distribuzione di questa specie.*

Parole chiave: descrizione, distribuzione, intervallo di espansione, Tunisia, Mediterraneo centrale

INTRODUCTION

The Red Sea goatfish *Parupeneus forsskali* (Fourmanoir & Guézé, 1976) is known as the most common mullid species in the Red Sea and Gulf of Aden, and one with a high economic value (Golani *et al.*, 2017). The species has recently entered the Mediterranean Sea through the Suez Canal. Two specimens were sighted in Turkish waters (Çinar *et al.*, 2006), while other specimens were recorded in the Levant Basin (Bariche *et al.*, 2013; Sonin *et al.*, 2013; Ali *et al.*, 2016). Following Ergüden *et al.* (2018), *P. forsskali* appears to be successfully established throughout the Turkish coast and probably in the entire eastern Mediterranean Basin. The species has migrated toward western areas and has also been recorded off the Egyptian coast (Mehanna *et al.*, 2016).

The migration has been confirmed by underwater observations in Tunisian waters, as a diver photographed the species in the wild and provided us with information about this important sighting, all of which is presented herein.

MATERIAL AND METHODS

P. forsskali was observed for the first time in the southern waters of the Gulf of Gabès surrounding the Jerba Island (33° 45' 35" N and 11° 03' 12") on 14 August 2016, at a depth not exceeding 7 m, on sandy-muddy bottom partially covered by sea grass and algae (Fig. 1), together with several sparid and mullid species. The specimen is herein described on the basis of a photograph (Fig. 2).

RESULTS AND DISCUSSION

The specimen was identified from a photograph as *P. forsskali* following a combination of characters: body elongated, slightly compressed, depth from origin of the first dorsal fin 20.5 %, pointed large upper profile of head slightly concave, eyes located in the upper part of the head, two long barbels both located on the chin, body pink with a black stripe from front tip of snout through the eye, along upper side of body, ending below rear base of second dorsal fin; a round black spot, about as large as the eye, on posterior third of caudal peduncle above lateral line, head and body yellow above stripe, white below, caudal fin yellow.

The external morphology and colour patterns of the present specimen are in complete agreement with Sonin *et al.* (2013), Bariche *et al.* (2013) and Ali *et al.* (2016), which – despite the identification being based on a photograph – allows us to confirm this as the first record of *Parupeneus forsskali* in Tunisian waters. However, captures of additional specimens will be needed for a taxonomic verification following the suggestions of Bello *et al.* (2014) and assessment of the species' real status in the area where five mullid species have been reported to date. Two of them – the red mullet *Mullus barbatus* Linnaeus, 1758, and the striped red mullet *M. surmuletus* Linnaeus, 1758 – are native, the remaining three – the West African goatfish *Pseudupeneus prayensis* (Cuvier, 1829), found off the northern Tunisian coast (Azzouz *et al.*, 2011), and two Lessepsian migrants, Por's goatfish *Upeneus pori* Ben-Tuvia & Golani, 1989, and the Red Sea goatfish *P. forsskali* – are allochthonous. *U. pori* was found in Bahiret El Biban, a brackish area located in southern Tunisia (Ben Souissi *et al.*, 2006), migrating toward northern areas, where captures of the species occurred in the Lagoon of Bizerte (Azzouz *et al.*, 2010). At present, *U. pori* is successfully established in the central Mediterranean and Italian seas (Deidun *et al.*, 2018).

The frequency of records of *P. forsskali* suggests an expansion of this species similar to that of *U. pori* into

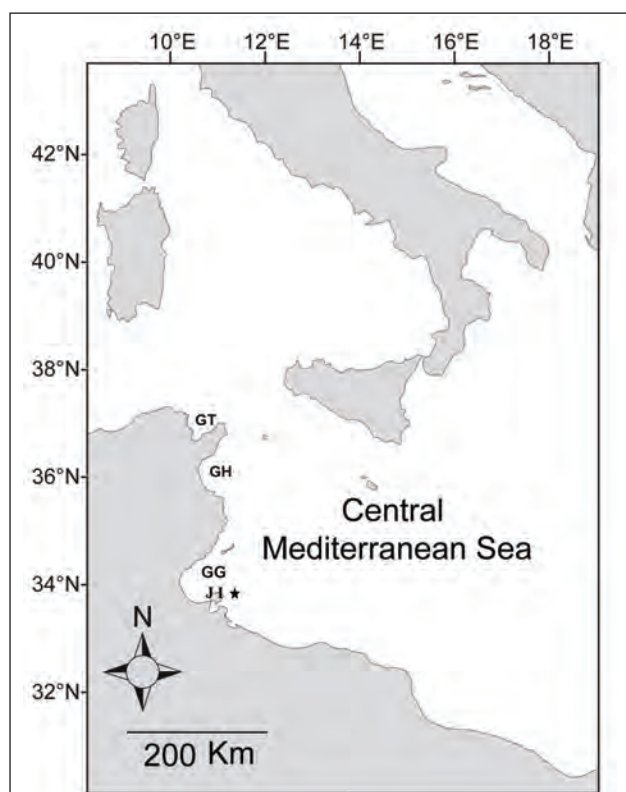


Fig. 1: Map of the Central Mediterranean Sea copied from Ben Amor *et al.* (2016) indicating the site where the photograph of *Parupeneus forsskali* was taken in the waters surrounding the Jerba Island (JI, black star) in the Gulf of Gabès (GG). Gulf of Tunis (GT). GH = Gulf of Hammamet.

Sl. 1: Zemljevid osrednjega Sredozemskega morja (prirejeno po Ben Amor *in sod.*, 2016) z označeno lokaliteto, kjer je bil ob otoku Jerba (JI, črna zvezdica) v Gabeškem zalivu fotografiran primerek vrste *Parupeneus forsskali*. Oznake: Gabeški zaliv (GG), Tuniški zaliv (GT), Hammameški zaliv (GH).



Fig. 2: *Parupeneus forsskali* (underwater photograph by Hédi Zaouali).

Sl. 2: *Parupeneus forsskali* (podvodni posnetek, foto: Hédi Zaouali).

the central Mediterranean and probably into the western basin. Additionally, the underwater photographer informed us that other *P. forsskali* specimens surrounded the present specimen. Furtherly, *P. forsskali* and *U. pori* should be locally monitored to allow an assessment of their importance and role in their new habitats. Interspecific competition between them and other indigenous mullid species cannot be totally ruled out, nor that

between *P. forsskali* and *U. pori* and other teleost species inhabiting similar biotopes and foraging for same preys.

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PRVI ZAPIS O POJAVLJANJU BRADAČA VRSTE *PARUPENEUS FORSSKALI* (OSTEICHTHYES: MULLIDAE) IZ TUNIZIJSKIH VODA (OSREDNJE SREDOZEMSKO MORJE)

Christian CAPAPÉ

Laboratoire d'Ichtyologie, Université de Montpellier, case 104, 34095 Montpellier cedex 5, France
E-mail: capape@univ-montp2.fr

Jeanne ZAOUALI & Khadija OUNIFI-BEN AMOR

Université de Carthage, Institut National Agronomique de Tunisie, 43 avenue Charles Nicolle, 1082-Tunis-Mahrajène, Tunisia, Université de Tunis El Manar, Faculté des Sciences de Tunis, Laboratoire de Biodiversité, Biotechnologie et Changement Climatique, LR11ES09, 1002, Tunis, Tunisia

Mohamed Mourad BEN AMOR

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POVZETEK

Avtorji poročajo o prvem zapisu o pojavljanju lesepske ribje selivke vrste *Parupeneus forsskali* (Fourmanoir & Guézé, 1976) v vodah okoli otoka Jerba (južna Tunizija). Podatek temelji na fotografiji, ki jo je posnel podvodni fotograf. To je peta vrsta bradačev, ki so bile doslej ugotovljene na obravnavanem območju. Avtorji nadalje razpravljajo o razširjanju vrste.

Ključne besede: opis, razširjenost, širjenje areala, Tunizija, osrednje Sredozemsko morje

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