

Short scientific article
Received: 2010-05-07

UDC 597.556.33:591.9(262)

OCCURRENCE OF THE POR'S GOATFISH *UPENEUS PORI* (OSTEICHTHYES: MULLIDAE) IN THE LAGOON OF BIZERTE (NORTHERN TUNISIA, CENTRAL MEDITERRANEAN)

Karima AZZOUZ, Sonia MANSOUR & Moncef BOUMAÏZA

Laboratoire d'Hydrobiologie Littorale et Limnique, Université du 07 novembre à Carthage, Faculté des Sciences, Zarzouna,
7021 Bizerte, Tunisia

E-mail: karimaazzouz_2008@yahoo.fr

Christian CAPAPÉ

Laboratoire d'Ichtyologie, case 104, Université Montpellier II, Sciences et Techniques du Languedoc, F-34095 Montpellier cedex 5, France

ABSTRACT

*The authors report on the second capture of a Por's goatfish *Upeneus pori* in Tunisian waters; it was 186 mm in total length and weighed 61 g. The specimen was captured in the Lagoon of Bizerte, brackish area in northern Tunisia (central Mediterranean) that constitutes the northernmost extension range in the area and concomitantly the westernmost extension range of *U. pori* in the Mediterranean Sea.*

Key words: Osteichthyes, Mullidae, *Upeneus pori*, Lagoon of Bizerte, northern Tunisia, range extension

PRESENZA DI TRIGLIA STRIATA *UPENEUS PORI* (OSTEICHTHYES: MULLIDAE) NELLA LAGUNA DI BIZERTE (TUNISIA SETTENTRIONALE, MEDITERRANEO CENTRALE)

SINTESI

*Gli autori segnalano la seconda cattura di Triglia striata *Upeneus pori* in acque della Tunisia. L'esemplare, 186 mm di lunghezza per 61 g di peso, è stato catturato nella Laguna di Bizerte, area salmastra della Tunisia settentrionale (Mediterraneo centrale), che rappresenta il limite di estensione più settentrionale della specie nell'area, nonché il limite di estensione più occidentale di *U. pori* nel mare Mediterraneo.*

Parole chiave: Osteichthyes, Mullidae, *Upeneus pori*, Laguna di Bizerte, Tunisia settentrionale, limite di estensione

INTRODUCTION

The Por's goatfish *Upeneus pori* (Ben-Tuvia & Golani, 1989), one of the Lessepsian migrant teleost species, is considered to be successfully established in the Mediterranean Sea, especially off the coast of Israel (Golani, 1994). The species was cited by Akyol *et al.* (2006) in the Aegean Sea, El Sayed (1994) off the Mediterranean coast of Egypt, and Ben Abdallah *et al.* (2004) off Libya. Additionally, it was recorded for the first time in Tunisian waters by Ben Souissi *et al.* (2005a) in the Bahiret El Biban, a hyperhaline lagoon, located in southern Tunisia.

During research conducted from August 2009, a specimen of Por's goatfish was collected in the Lagoon of Bizerte, brackish area located in northeastern Tunisia, between 37°08' and 37°14' N, and between 09°46' and 09°56' E (Fig. 1). The aim of this paper is to report on the second record of *U. pori* in Tunisian waters, to give a short description of the specimen and briefly comment on its distribution in the area and in the Mediterranean Sea.

MATERIAL AND METHODS

The second Tunisian Por's goatfish was captured on 5 May 2010, by trammel nets, 20–24 mm mesh size, at 7

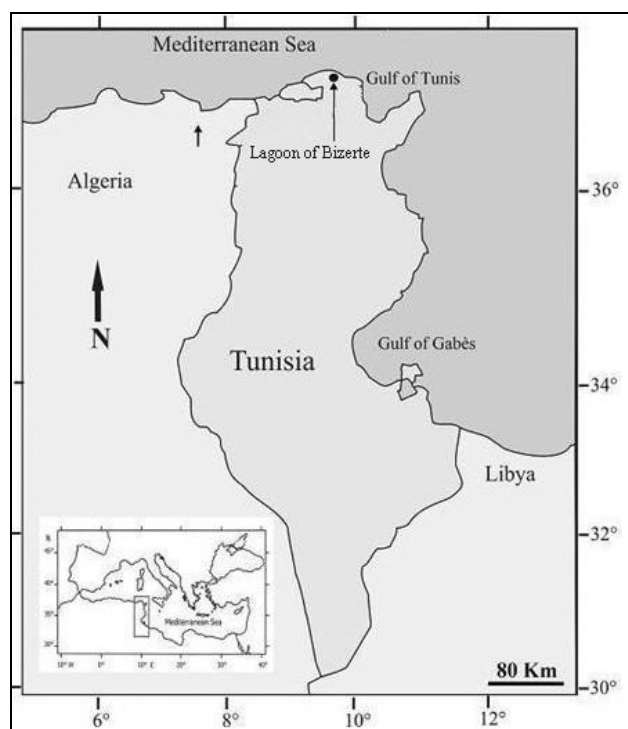


Fig. 1: Map of the Mediterranean showing the Tunisian coast and pointing out the Lagoon of Bizerte.

Sl. 1: Zemljevid Sredozemlja s tunizijsko obalo in označeno Laguno Bizerte.

m depth, on sandy bottom, in the northern part of the Lagoon of Bizerte. This *U. pori* specimen was caught together with many other mullid species, such as the red mullet, *Mullus barbatus* (Linnaeus, 1758) and the striped red mullet, *Mullus surmuletus* (Linnaeus, 1758).

Soon after its capture, the specimen was identified following Hureau (1986), Golani *et al.* (2002) and Ben Souissi *et al.* (2005a), photographed, and measured for total length (TL) to the nearest millimetre and total mass (TM) to the nearest gram (Fig. 2). Additionally, morphometric measurements with percentage of TL, and meristic counts were carried out following Ben-Tuvia & Golani (1989), Golani *et al.* (2002) and Ben Souissi *et al.* (2005a) (see Table 1). The specimen is preserved in 5% buffered formalin and deposited in the Ichthyological Collection at the Laboratoire d'Hydrobiologie Littorale et Limnique of the Faculté des Sciences of Bizerte (Tunisie), receiving the catalogue number FSB-Upe-por 01.

RESULTS AND DISCUSSION

The specimen found in the Lagoon of Bizerte is described as follows: body elongate, moderately compressed. Head and snout scaly. Snout rounded, chin with two short and thin barbels; two feeble opercular spines. Maxilla ending below front of eye; mouth slightly inferior; posterior nostrils forming a conspicuous slit in front of eye; origin of second dorsal fin above vent. First dorsal fin with seven spines, the first one the longest; the second dorsal fin with one spine and eight soft branched rays, the last one branched to base anal fin with one minute spine and seven rays. Colour of head and body red-brown, barbels white; large horizontal brown bar from gill opening to mid-base of tail; first dorsal fin with four horizontal bars; second dorsal fin with two horizontal bars; upper lobe of caudal fin with five oblique red-brown bars; lower lobe of caudal fin with five oblique red-brown bars. The morphometric measurements and meristic counts are given in Table 1.

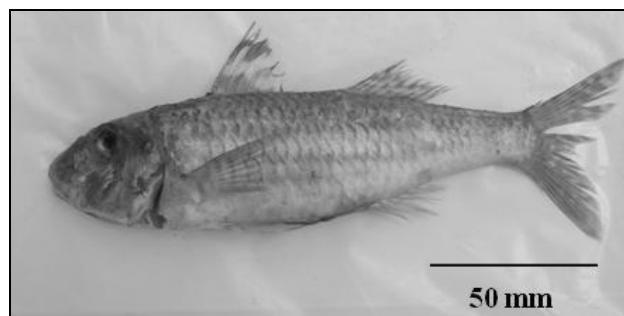


Fig. 2: The *Upeneus pori* specimen (ref. FSB-Upe-por 01), captured on 5 May 2010, off Bizerte, scale bar = 50 mm.

Sl. 2: Primerek *Upeneus pori* (ref. FSB-Upe-por 01), ujet 5. maja 2010 pri kraju Bizerte, merilo = 50 mm.

Tab. 1: Morphometric measurements and meristic counts of the *Upeneus pori* specimen (ref. FSB-Upe-por 01). (*) Comparison with the specimen described by Ben Souissi *et al.* (2005), and the holotype (), data from Ben-Tuvia & Golani (1989).**

Tab. 1: Merfometrične meritve in meristično štetje pri primerku *Upeneus pori* (ref. FSB-Upe-por 01). (*) Primerjava s primerkom, ki ga je opisal Ben Souissi *et al.* (2005), in holotipom (), podatki iz Ben-Tuvia & Golani (1989).**

Specimen	FSB-Upe-por 01		MUL-Upp-01*		HUJ 13622**	
Total mass (g)	61		12.7		–	
Measurements	mm	%SL	mm	%SL	mm	%SL
Total length	186.0	114.8	110	118.3	124	126.5
Length to fork	168.0	103.7	97.7	105.1	–	–
Standard length	162.0	100.0	93	100	98	100.0
Head length	40.3	24.9	23.8	26.6	23	23.5
Snout length	11.3	7.0	7.2	7.8	10.9	11.1
Interorbital width	8.6	5.3	6	6.5	8.2	8.4
Eye diameter	9.9	6.1	6.3	6.8	7.1	7.2
Barbels length	34.0	21.0	13.9	14.9	15.5	15.8
Caudal fin height	33.0	20.4	17.4	18.7	–	–
Caudal peduncle length	36.9	22.8	23.9	25.7	24.5	25.0
Caudal peduncle depth	15.3	9.4	8.3	8.9	10.3	10.5
Predorsal length	51.8	32.0	32	34.4	36.7	37.4
Space between snout and vent	95.0	58.6	52.3	56.2	–	–
Pectoral fin length	32.4	20.0	16.6	17.18	19.9	20.3
Pectoral fin base	9.7	6.0	4.1	4.4	–	–
First dorsal fin height	25.0	15.4	15.2	16.3	14.5	14.8
First dorsal fin base	21.3	13.1	13.1	14.1	–	–
Second dorsal fin height	18.1	11.2	15.2	16.3	14.5	14.8
Second dorsal fin base	23.1	14.3	13.5	14.5	–	–
Pelvic fin length	24.2	15.0	16.5	17.7	20	20.4
Pelvic fin base	8.9	5.5	4.8	17	–	–
Anal fin height	17.0	10.5	14.7	15.8	13.3	13.6
Anal fin base	16.9	10.5	14.8	15.9	–	–
Axillary scale length	9.5	5.9	9*	–	(9.2)**	–
Counts	FSB-Upe-por-01		MUL-Upp-01		HUJ 13622	
Dorsal rays	VII+9		VII+9		VII+9	
Pelvic rays	I+5		I+5		–	
Pectoral rays	14		14		–	
Anal rays	I+7		I+7		I+7	
Gill-rakers	7+19		7+19		7+19	
Scales between two dorsal fins	5		4		3(4)	
Scales below lateral line	6		5		5	
Lateral line scales counts	31		30		29	
Additional scales on tail	2		2		2	

Description, colour, morphometric measurements and meristic counts are in agreement with Ben-Tuvia & Golani (1989), Golani *et al.* (2002) and Ben Souissi *et al.* (2005a). They confirm the second record of *U. pori* in Tunisian waters, that constitutes the northernmost extension range of the species in the area and concomitantly the westernmost extension range in the Mediterranean Sea. Additionally, this new finding confirms Golani's opinion (1998), suggesting that once a Lessepsian teleost species enters the Mediterranean and establishes a self-sustaining population, no physical barriers prevent its dispersal westward.

Several alien teleost species were found to date in Tunisian waters (Ben Souissi *et al.*, 2005b). Some of them are definitively established in the area, the filfish *Stephanolepis diaspros* (Fraser-Brüner, 1940) and the blunthead puffer *Sphoeroides pachygaster* (Müller & Troschel, 1848), being the best instances (Ben Amor & Capapé, 2008; Zouari-Ktari *et al.*, 2008; Chérif *et al.*, 2010). However, the same as Golani (1994) observed for *U. pori* specimens from eastern Levant Basin, other findings are needed to assess the impact of *U. pori* in Tunisian waters.

POJAV TUJERODNEGA BRADAČA *UPENEUS PORI* (OSTEICHTHYES: MULLIDAE)
V LAGUNI BIZERTE (SEVERNA TUNIZIJA, OSREDNJE SREDOZEMLJE)

Karima AZZOUZ, Sonia MANSOUR & Moncef BOUMAÏZA

Laboratoire d'Hydrobiologie Littorale et Limnique, Université du 07 novembre à Carthage, Faculté des Sciences, Zarzouna,
7021 Bizerte, Tunisia
E-mail: karimaazzouz_2008@yahoo.fr

Christian CAPAPÉ

Laboratoire d'Ichtyologie, case 104, Université Montpellier II, Sciences et Techniques du Languedoc, F-34095 Montpellier cedex 5, France

POVZETEK

V članku avtorji poročajo o drugem ulovu bradača *Upeneus pori* v tunizijskih vodah; celotna dolžina primerka 186 mm, teža 61 g. Primerek je bil ulovljen v Laguni Bizerte, brakičnem območju v severni Tuniziji (osrednje Sredozemlje), kar predstavlja najsevernejši del območja razširjenosti vrste v regiji in s tem najzahodnejši del območja razširjenosti *U. pori* v Sredozemskem morju.

Ključne besede: Osteichthyes, Mullidae, *Upeneus pori*, Laguna Bizerte, severna Tunizija, območje razširjenosti

REFERENCES

- Akyol, O., V. Ünal. & T. Ceyhan (2006):** Occurrence of two Lessepsian migrant fish, *Oxyurichtchys petersi* (Gobiidae) and *Upeneus pori* (Mullidae), from the Aegean Sea. *Cybiurn*, 30(4), 389–390.
- Ben-Abdallah, R., A. A. Alturky & A. A. Fitury (2004):** Commercially exploited fishes in Libya. In: Actes des 6^e Journées tunisiennes des sciences de la Mer (ATSMer). Tunis, novembre 2003. *Bull. Inst. Natl. Sci. Tech. Mer Salammbô*, n° special, 52–55.
- Ben Amor, M. M. & C. Capapé (2008):** Occurrence of a filefish closely related to *Stephanolepis diaspros* (Osteichthyes: Monacanthidae) off northern Tunisian coast (south-western Mediterranean Sea). *Cah. Biol. Mar.*, 49(4), 323–328.
- Ben Souissi, J., H. Mejri, J. Zaouali & C. Capapé (2005a):** On the occurrence of the Por's goatfish, *Upeneus pori* (Mullidae) in southern Tunisia (central Mediterranean). *Cybiurn*, 29(4), 410–412.
- Ben Souissi, J., N. Trigui El Ménif, M. S. Mahjoub, H. Méjri, J. P. Quignard, C. Capapé & J. Zaouali (2005b):** On the recent occurrences of marine exotic species in the Tunisian waters. In: Özhan, E. (ed.): Proc. 7th international Conference of the Mediterranean coastal Environment, MEDCOAST 05. 25–29 October 2005, Kusadast, Turkey, pp. 530–540.
- Ben-Tuvia, A. & D. Golani (1989):** A new species of goatfish (Mullidae) of the genus *Upeneus* from the Red Sea and the eastern Mediterranean. *Isr. J. Zool.*, 36, 103–112.
- Chérif, M., M. M. Ben Amor, M. Bdioui, S. Ben Salem, H. Missaoui & C. Capapé (2010):** Additional records of the blunthead puffer *Sphoeroides pachygaster* (Osteichthyes: Tetraodontidae) off the Tunisian coast (central Mediterranean). *Annales, Ser. Hist. Nat.*, 20(1). (In press)
- El Sayed, R. S. (1994):** Check-list of Egyptian Mediterranean fishes. National Institute of Oceanography and Fisheries, Alexandria, Egypt, ix + 77 p.
- Golani, D. (1994):** Niche separation between colonizing and indigenous goatfish (Mullidae) along the Mediterranean coast. *J. Fish Biol.*, 45, 503–513.
- Golani, D. (1998):** Distribution of Lessepsian migrant fish in the Mediterranean. *Ital. J. Zool.*, 65(suppl.), 95–99.
- Golani, D., L. Orsi-Relini, E. Masutti, & J. P. Quignard (2002):** CIESM Atlas of exotic fishes in the Mediterranean, Vol. 1. In: Briand, F. (ed.): Fishes. CIESM Publications, Monaco, 256 p.
- Hureau, J. C. (1986):** Mullidae. In: Whitehead, P. J. P., M. L. Bauchot, J. C. Hureau, J. Nielsen & E. Tortonese (eds.): Fishes of the north-eastern Atlantic and the Mediterranean, Vol. II. UNESCO, Paris, pp. 877–882.
- Zouari-Ktari, R., M. N. Bradai & A. Bouain (2008):** The feeding habits of the Lessepsian fish *Stephanolepis diaspros* (Fraser-Brunner, 1940) in the Gulf of Gabes (eastern Mediterranean Sea). *Cah. Biol. Mar.*, 49(4), 329–338.