

On the occurrence of the Por's goatfish, *Upeneus pori* (Mullidae) in southern Tunisia (central Mediterranean)

by

Jamila BEN SOUISSI (1), Hamadi MEJRI (1),
Jeanne ZAOUALI (1) & Christian CAPAPÉ (2)

RÉSUMÉ. - Sur la présence du rouget de Por, *Upeneus pori* (Mullidae) en Tunisie méridionale (Méditerranée centrale).

Un spécimen de rouget de Por, *Upeneus pori* Ben-Tuvia & Golani, 1989 est signalé pour la première fois en Tunisie, dans la Bahiret El Biban, lagune hyperhaline qui jouxte le golfe de Gabès, dans le sud du pays. Des caractères biométriques et méristiques et une description succincte de l'espèce sont présentés. *U. pori* fait partie des poissons immigrants lessepsiens qui depuis plusieurs décennies sont observés dans les eaux tunisiennes.

Key words. - Mullidae - *Upeneus pori* - MED - Tunisia - Bahiret El Biban - Gulf of Gabès - Lessepsian migrant - First record.

According to Quignard and Tomasini (2000), five mullid species are reported in the Mediterranean Sea: the red mullet, *Mullus barbatus* Linnaeus, 1758, the striped red mullet, *M. surmuletus* Linnaeus, 1758, the west African goatfish, *Pseudupeneus prayensis* (Cuvier, 1829), the goldband goatfish, *Upeneus moluccensis* (Bleeker, 1855) and the Por's goatfish *U. pori* Ben-Tuvia & Golani, 1989.

As in several other Mediterranean areas (Hureau, 1986), two species only, *M. barbatus* and *M. surmuletus*, are reported in the Tunisian waters (Gharbi & Ktari, 1981a, 1981b; Bradai, 2000), and have locally a high economical interest (Gharbi, 1984).

However, investigations recently conducted in southern Tunisia (Gulf of Gabès and adjacent waters) allowed to collect for the first time a Por's goatfish, *U. pori*, a Lessepsian migrant previously reported in the Levantine basin (Ben-Tuvia and Golani, 1989; Golani, 1996) and more recently off the Egyptian coast (El Sayed, 1994) and the Libyan coast (Ben-Abdallah *et al.*, 2004). In this paper, we give a description of this specimen and a short comment on the distribution of the species in the area and in the Mediterranean.

DESCRIPTION OF THE TUNISIAN SPECIMEN

On 9 December 2003, a Por's goatfish was captured in the Bahiret El Biban, hyperhaline lagoon located close to the Gulf of Gabès (Medhioub et Perthuisot, 1977) (Fig. 1). The specimen was captured at two metres depth on sandy bottom, partially covered by a sea-grass bed of *Posidonia oceanica* and *Cymodocea nodosa*, close to a fish-trapping, built between the Bahiret El Biban and the

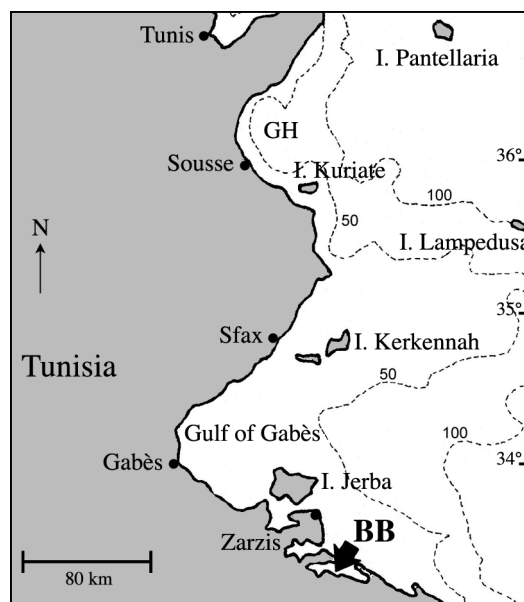


Figure 1. - Map of Tunisia showing the Gulf of Gabès and the capture site of the Tunisian *Upeneus pori* in the Bahiret El Biban (BB, arrow). [Carte du golfe de Gabès (Tunisie) indiquant le lieu de capture du spécimen tunisien au Bahiret El Biban (BB, flèche).]

Gulf of Gabès (33°15'42"N-11°28'27"E). The specimen is preserved in 5% buffered formalin solution and deposited in the Ichthyological Collection of the Institut national agronomique de Tunisie, catalogue number MUL-Upp-01 (Fig. 2).

Morphometric measurements, in percents of standard length and meristic counts are presented in table I, following Ben-Tuvia and Golani (1989). The Tunisian specimen 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; teeth in jaws small, villiform, with 3 rows in front and 1-2 at the back; elliptic patch of fine teeth on each side of vomer and elongated patch of slightly larger teeth on palatines, posterior nostrils forming a conspicuous slit in front of eye; first dorsal fin origin above fourth LL scale, origin of second dorsal fin above vent. First dorsal fin with seven spines, the first one the longest; second dorsal

(1) Département des Ressources animales, halieutiques et des technologies agroalimentaires, Institut national agronomique de Tunisie, 43 avenue Charles-Nicolas, Cité Mahrajène, 1082 Tunis, TUNISIE. [bensouissi.jamila@inat.agrinet.tn]

(2) Laboratoire d'Ichtyologie, Case 104, Université Montpellier II, Sciences et techniques du Languedoc, 34095 Montpellier CEDEX 5, FRANCE. [capape@univ-montp2.fr]



Figure 2. - *Upeneus pori* (MUL-Upp-01) captured in the Bahiret El Biban. [*Upeneus pori* capturé au Bahiret El Biban.]

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. A parasite copepod, *Lernaeopholus sultanus* (Nordmann, 1839), was fixed on the palatine wall.

DISCUSSION

Description, colour, morphometric measurements and meristic counts are in agreement with Ben-Tuvia and Golani (1989). At present, *U. pori* should be included in Tunisian fauna as well as other migrant species (Bradai *et al.*, 2004; Ben Souissi *et al.*, 2003, 2004, 2005).

Ben-Tuvia and Golani (1989) provided a large account of relationships between *U. pori* and its closely related species; they also presented some aspects of the Por's goatfish distribution in the Red Sea and off the Mediterranean coast of Israel. Golani (1994) showed that a sustainable population is definitively established in this area. Niches overlapping with indigenous Mediterranean goatfishes seems to be limited by habitat partitioning. However, if Golani (1994) noted that niche separation by feeding habits is much less evident, the difference between the spawning seasons may contribute to niche separation and may reduce interspecific competition pressure to a minimum.

The Tunisian record shows that *U. pori* extends its distribution westernmore. El Sayed (1994) listed only *U. pori* in the Egyptian Mediterranean fishes and did not comment its occurrence in the area. Ben-Abdallah *et al.* (2004) recorded *U. pori* off Libya since 1994; but they did not included it among the exotic teleost species commercially exploited in the area. In Tunisian waters, *U. pori* was found in the Bahiret El Biban, where several teleost species having an economical interest are regularly and commonly fished. The related species, such as *M. barbatus* and *M. surmuletus*, occur also in the area. They are captured in spring and in autumn, and during 2003, 2.6 tons were landed (Mtimet, 2004), mostly *M. surmuletus*; some kilograms of *M. barbatus* were only fished during the same period (Anonyme, 2004). On the other hand, the two mulld species are less abundantly caught than other teleost species such as *Diplodus annularis* (111 tons), *Sparus aurata* (62.6 tons), *Dicentrarchus labrax* (15.8 tons) or mugilids (28 tons). The future of *U. pori* in the Bahiret El Biban remains speculative. However, the establishment of a local population cannot be excluded. Golani (1994) showed that *M. barbatus* and *M. surmuletus* did not inhabit similar niches and feed on same prey species.

Table I. - Morphometrical measurements and counts carried out on the Tunisian *Upeneus pori* (MUL-Upp-01). Comparison with the holotype (HUI 13622, data from Ben-Tuvia and Golani, 1989). *: Method of measurement provided by Golani (pers. comm., 2004); **: Mean value calculated from several other specimens caught off the Mediterranean coast of Israel (Ben-Tuvia and Golani, 1989). [*Mesures morphométriques et méristiques du spécimen tunisien. Comparaisons avec l'holotype (données d'après Ben-Tuvia et Golani, 1989). * : Méthode de mesure fournie par Golani (comm. pers., 2004) ; ** : Valeur moyenne calculée d'après de nombreux autres spécimens capturés au large de la côte méditerranéenne d'Israël (Ben-Tuvia et Golani, 1989).*]

	MUL-Upp-01		HUI 13622	
Total mass in grams	12.7		-	
Measurements	mm	% SL	mm	% SL
Total length	110.0	118.3	124.0	126.5
Length to fork	97.7	105.1	-	-
Standard length	93.0	100.0	98.0	100.0
Head length	23.8	26.6	23.0	23.5
Snout length	7.2	7.8	10.9	11.1
Interorbital width	6.0	6.5	8.2	8.4
Eye diameter	6.3	6.8	7.1	7.2
Barbels length	13.9	14.9	15.5	15.8
Caudal fin height	17.4	18.7	-	-
Caudal peduncle length	23.9	25.7	24.5	25.0
Caudal peduncle depth	8.3	8.9	10.3	10.5
Predorsal length	32.0	34.4	36.7	37.4
Space between snout and vent	52.3	56.2	-	-
Pectoral fin length	16.6	17.8	19.9	20.3
Pectoral fin base	4.1	4.4	-	-
First dorsal fin height	15.2	16.3	14.5	14.8
First dorsal fin base	13.1	14.1	-	-
Second dorsal fin height	15.2	16.3	14.5	14.8
Second dorsal fin base	13.5	14.5	-	-
Pelvic fin length	16.5	17.7	20.0	20.4
Pelvic fin base	4.8	17.0	-	-
Anal fin height	14.7	15.8	13.3	13.6
Anal fin base	14.8	15.9	-	-
Axillary scale length	9 *	-	(9.2)**	-
Counts	MUL-Upp-01		HUI 13622	
Dorsal rays	VII + 9		VII + 9	
Pelvic rays	I + 5		-	
Pectoral rays	14		-	
Anal rays	I + 7		I + 7	
Gill-rakers	7 + 19		7 + 19	
Scales between two dorsal fins	4		3 (4)	
Scales below lateral line	5		5	
Lateral line scales counts	30		29	
Additional scales on tail	2		2	

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