

**FIRST RECORD OF IMPERIAL BLACKFISH, *SCHEDOPHILUS OVALIS*
(ACTINOPTERYGII: PERCIFORMES: CENTROLOPHIDAE), FROM THE TUNISIAN COAST,
CENTRAL MEDITERRANEAN**

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Abstract. Two specimens of imperial blackfish, *Schedophilus ovalis* (Cuvier 1829), were found for the first time off the Tunisian coast, in northern area. Both specimens are described, and occurrence of the species in the area and the Mediterranean Sea is discussed and commented.

Keywords: Osteichthyes, morphometric measurements, meristic counts, distribution, extension range

Imperial blackfish, *Schedophilus ovalis* (Cuvier 1833), is widely distributed in the eastern Atlantic from Spain to South African waters, and occurs also around Azores, Madeira, and Canary Islands (Haedrich 1986, 1990). However, Haedrich (1986) and Fischer et al. (1987) wrongly reported that *S. ovalis* is present throughout the Mediterranean Sea. In the western Mediterranean *Schedophilus ovalis* is only known from the Balearic Islands (Deudero et al. 1999), Spain (Stefanescu and Massutí 1992), French waters, including Corsica (Francour and Javel 2003), and eastwards, to Italian waters (Orsi-Relini et al. 1990, Relini 1995, Psomadakis et al. 2006), including Sardinia (Follesa et al. 2006). In the eastern Mediterranean the fish has been reported from the Aegean Greek waters (Corsini-Foka and Frantzis 2009) and the Turkish Mediterranean coast, in Antalya Bay (Filiz and Güzelaydın 2014), and Iskanderun Bay (Erguden et al. 2013); the coast of Israel being its easternmost extension range (Golani 1996, 2005).

Conversely, imperial blackfish is unknown to date from the south-eastern Mediterranean, and in this paper, the collection of two juvenile specimens off the Tunisian coast is

reported. The first specimen was caught on 10 February 2011 at 2.5 m depth (37°14'17.00"N, 10°08'04.80"E), and the second one on 11 February 2011, at 5 m depth (37°14'28.77"N, 10°07'32.21"E). Both specimens were captured by trammel net of 26-mm stretched mesh size, on sandy rocky bottom partially covered by algae. They were preserved in 10% buffered formalin and deposited in the Ichthyological Collection of the Faculté des Sciences de Bizerte, receiving catalogue numbers FSB-Sche-ova-01 and FSB-Sche-ova-02, respectively (Fig. 1).

The identification of both specimens was carried out based on the following diagnosis: body deep and compressed, elongate oval shape, with greatest body depth at about vent; back and belly moderately arched; caudal peduncle short and deep; eye large surrounded by a low rim; lips thin; unpaired fins long and rather high, low anteriorly with short spines grading into longer branched rays. Colour dark grey to brownish with dark spots somewhat arranged in longitudinal lines.

Additionally, morphometric measurements were recorded to the nearest 1 mm and weighed to the nearest

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Fig. 1. Imperial blackfish, *Schedophilus ovalis*; Specimen referenced as FSB-Sche-ova-01 (**A**); Specimen referenced as FSB-Sche-ova-02 (**B**); Scale bar = 30 mm

1 g, following Francour and Javel (2003); they are presented for both specimens in Tables 1 and 2. Morphology, morphometric measurements (in absolute values as well as expressed in percent of standard length), meristic counts, and colour are in agreement with previous descriptions of the species (Haedrich 1986, Orsi-Relini et al. 1990, Stefanescu and Massuti 1992, Psomadakis et al. 2006).

The presently reported two findings constitute the first records in the Tunisian waters of *Schedophilus ovalis*, which could be included in the Tunisian ichthyofauna, enlarging the number of fish species reported to date in the area (Bradai et al. 2004). Additionally, these findings constitute also the first records of the species in the southern Mediterranean Sea. Apart, from *S. ovalis* in Tunisian waters, another its congener—the Cornish blackfish, *Schedophilus*

Table 1

Absolute and relative values of selected morphometric measurements of both specimens of imperial blackfish, *Schedophilus ovalis*, collected off the north-eastern Tunisian coast

Parameter	Specimen			
	FSB-Sche-ova-01		FSB-Sche-ova-02	
	[mm]	[%SL]	[mm]	[%SL]
Total length	111	130.8	177	130.1
Fork length	91	107.6	144	105.5
Standard length	84	100.0	136	100
Pre-dorsal fin length	23	26.86	35	25.6
Pre-pectoral fin length	22	26.5	39	28.6
Pre-anal fin length	54	63.9	76	56.1
Snout length	8	9.7	11	8.0
Eye diameter	8	9.2	10	7.3
Dorsal fin length	52	61.0	91	66.9
Pectoral fin length	9	11.0	11	8.3
Anal fin length	29	33.9	51	37.5
Body height	33	39.5	51	37.5
Caudal fin length	13	15.3	20	15.0

SL = standard length.

Table 2
Meristic counts and total body weight of both specimens of imperial blackfish, *Schedophilus ovalis*, collected off the north-eastern Tunisian coast

Parameter	Specimen	
	FSB-Sche-ova-01	FSB-Sche-ova-02
Dorsal rays	VII + 30	VII + 32
Pectoral rays	I + 5	I + 5
Anal rays	III + 24	III + 24
Pectoral rays	22	22
Caudal rays	19	19
Total body weight [g]	13.3	49.0

medusophagus (Cocco, 1833)—was previously recorded by Bradai et al (2004). *Schedophilus ovalis* can be distinguished from *S. medusophagus* occurring in Tunisian waters by the presence of very strong spines in the median fins and body rigid, large scales, and the dorsal fin count (Haedrich 1986). Rigid and firm body of *Schedophilus ovalis* explicitly differs from the soft and limp body of *S. medusophagus*.

These new records of *Schedophilus ovalis* from Tunisia show that the species significantly extended southward its distribution in the Mediterranean Sea (Fig. 2). Francour and Javel (2003) noted that the species is regularly captured in north-western Mediterranean, offshore, around buoys or FADs, but did not constitute a dominant species in fish assemblages. Dulčić et al. (1999, 2012) and Francour and Javel (2003) noted an increase of captures in the Adriatic Sea and off the Mediterranean coast of France, probably

due to the water warming. Similar pattern could explain the recent occurrence of *S. ovalis* off the Tunisian coast.

However, the species has a pelagic way of life during juvenile stages and juveniles could be carried away by sea currents that probably play a more and less important role in widening its expansion throughout the Mediterranean. Yet, these two findings do not support that a sustainable population is a present established in its new region as in other Mediterranean areas (Francour and Javel 2003), therefore further and more records are needed to support such hypothesis.

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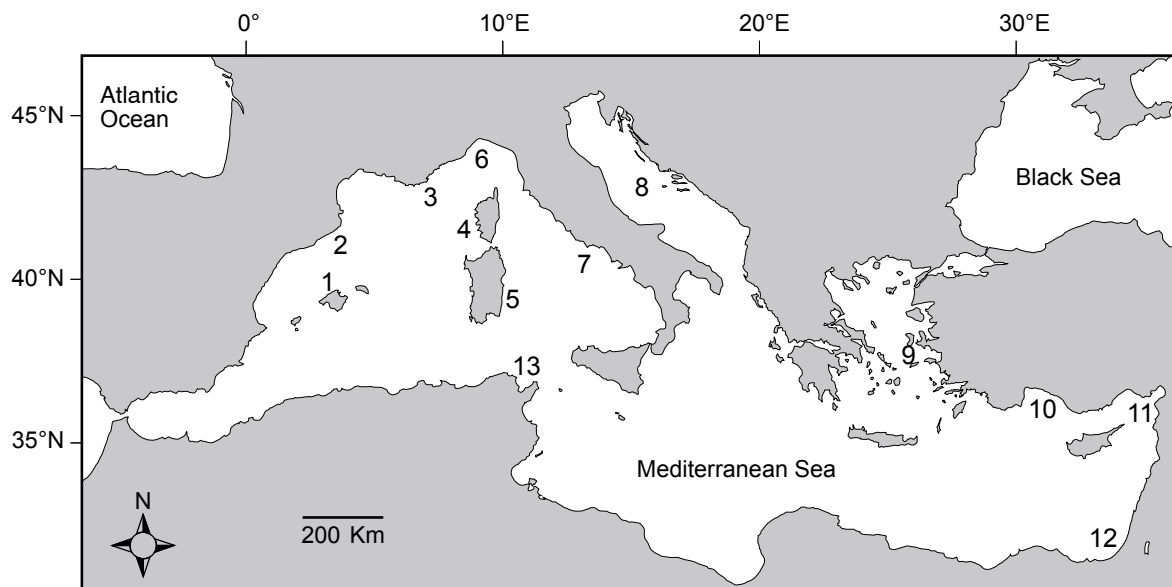


Fig. 2. Map of the Mediterranean Sea showing the capture sites of imperial blackfish, *Schedophilus ovalis*, recorded to date (from west to east): 1 = Balearic Islands (Deudero et al. 1999), 2 = Catalan Sea (Stefanescu and Massutí 1992), 3 = Southern France (Francour and Javel 2003), 4 = Corsica (Francour and Javel 2003), 5 = Sardinia (Follesa et al. 2006), 6 = Ligurian Sea (Orsi-Relini et al. 1990), 7 = Tyrrhenian Sea (Psomadakis et al. 2006), 8 = Adriatic Sea (Dulčić et al. 1999, 2010), 9 = Aegean Sea of Greece (Corsini-Foka and Frantzis 2009), 10 = Turkish waters, Antalya Bay (Filiz and Güzelaydın 2014), 11 = Turkish waters, Iskenderun Bay (Erguden et al. 2013), 12 = Coast of Israel (Golani 1996, 2005), 13 = Tunisian waters (This study)

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