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ON THE ADDITIONAL OCCURRENCES OF THE IMPERIAL BLACKFISH, *SCHEDOPHILUS OVALIS* (CUVIER, 1833) (CENTROLOPHIDAE) IN THE ADRIATIC SEA

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ABSTRACT

Additional records of imperial blackfish, Schedophilus ovalis (Cuvier, 1833) in the Adriatic waters are herewith documented. These records increase the knowledge on the richness of the Adriatic marine ichthyofauna and may suggest an expansion of the geographical distribution of the species from southern to northern areas in the Adriatic.

Keywords: *Schedophilus ovalis*, imperial blackfish, Centrolophidae, Adriatic Sea

NUOVE SEGNALAZIONI DI CENTROLOFO VIOLA, *SCHEDOPHILUS OVALIS* (CUVIER, 1833) (CENTROLOPHIDAE) IN MARE ADRIATICO

SINTESI

L'articolo riporta nuove segnalazioni della presenza del centrolofo viola, Schedophilus ovalis (Cuvier, 1833), nel mare Adriatico. Tali dati vengono ad arricchire la conoscenza in merito alla ricchezza dell'ittiofauna marina adriatica. I risultati suggeriscono inoltre un'estensione della distribuzione geografica del centrolofo viola dalle aree meridionali a quelle settentrionali del mare Adriatico.

Parole chiave: *Schedophilus ovalis*, centrolofo viola, Centrolophidae, mare Adriatico

INTRODUCTION

The imperial blackfish, *Schedophilus ovalis* (Cuvier, 1833) is present in the eastern and western-central Atlantic and throughout most of the Mediterranean (Hedrich, 1990). Wider distribution is reported in the literature, but due to conflicting records and issues with species identification, a revision of the genus is needed to establish a more accurate distribution (see Francour & Javel, 2003). Adult *S. ovalis* usually inhabit deeper waters at the edge of continental shelves and around oceanic islands while juveniles are epipelagic, often found in association with floating medusae or various floating objects (Quigley & Flannery, 2004). Jardas (1996) noted that it is a very rare species in the Adriatic Sea. Dulčić *et al.* (2003) reported occurrences of the imperial blackfish only in the southern part of the Adriatic Sea.

In this paper we present additional records of this species (Fig. 1) with descriptions of the largest and the smallest specimen collected in the Adriatic Sea.

MATERIALS AND METHODS

On 15 April 2004, SCUBA divers observed 10 specimens of the imperial blackfish swimming under floating

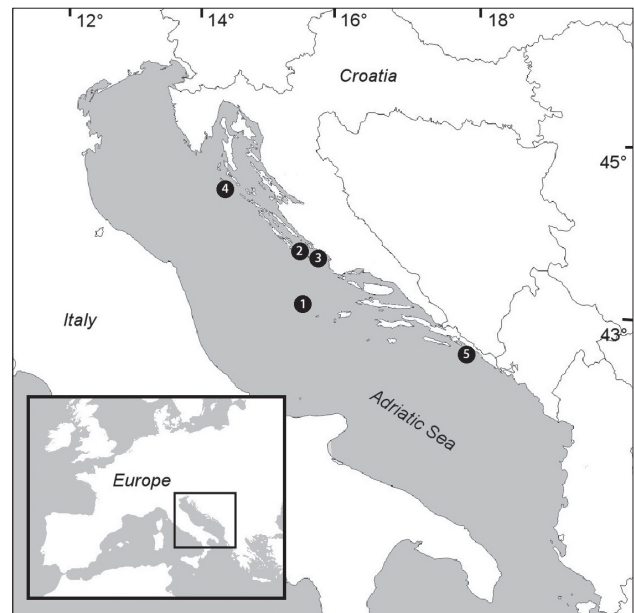


Fig. 1: Recent records of *Schedophilus ovalis* in the eastern Adriatic (see Table 1 for details).

Sl. 1: Novejši podatki o pojavljanju vrste *Schedophilus ovalis* v vzhodnem Jadranu (glej Tabelo 1 za razlago).

Tab. 1: Records of *Schedophilus ovalis* in the Adriatic Sea.

Tab. 1: Zapisi o pojavljanju vrste *Schedophilus ovalis* v Jadranskem morju.

Location (Source)	Date	TL (cm)	No. specimens / Habitat / Remarks
Korčula Island (southern Adriatic) (Kolombatović, 1902)	1902	-	1 specimen
20 NM SE from Dubrovnik (southern Adriatic) (V. Onofri, <i>pers. comm.</i>)	1979	25.2	1 specimen / at the surface by trawl
Pelješac Channel (southern Adriatic) (Onofri, 1986)	1982	-	1 specimen / at 2 m depth / with <i>Schedophilus medusophagus</i> and jellyfish <i>Pelagia noctiluca</i>
35 Nm SE from Dubrovnik (southern Adriatic) (Dulčić <i>et al.</i> , 2003)	28 July 2003	38.8	1 specimen / at 1 m depth / sea surface temperature 25.0 °C
SW off Jabuka Island (Pomo Pit) (middle Adriatic; this work) (Fig. 1, 1)	15 April 2004	30-45	10 specimens / at 2 m depth / at the surface under floating buoy (visual census), with small <i>Balistes carolinensis</i> and <i>Trachurus</i> sp.
1 NM off Vrgada Island (this work) (Fig. 1, 2)	21 April 2004	25-35	4 specimens / at about 1.5 m depth / fish close to farming cages (tuna)
1 NM off Murter Island (middle Adriatic; this work) (Fig. 1, 3)	21 April 2004	around 40	1 specimen / at about 3 m depth / specimen close to farming cages (tuna)
Near Susak Island (northern Adriatic; this work) (Fig. 1, 4)	5 April 2007	54.5	1 specimen ♂ / at about 40 m depth
Near Koločep Island (southern Adriatic; this work) (Fig. 1, 5)	August 2010	9.3	1 specimen / at the surface

buoys near a vessel, together with small *Balistes carolinensis* and *Trachurus* sp. near the islet of Jabuka, (Pomo Pit) at a depth of about 2 m (Tab. 1).

On 21 April 2004, SCUBA divers observed 4 specimens of the imperial blackfish near Vrgada Island close to fish farming cages (*Thunnus thynnus*) at a depth of around 1.5 m, while 1 specimen was observed near Murter Island, also close to fish farming cages, at a depth of about 3 m.

One specimen of the imperial blackfish was captured in a trawl catch collected in the northern Adriatic (near Susak Island) on 5 April, 2007. All records were in regions further north than their previous record areas. The capture near Susak Island represents the northernmost record for this species in the Adriatic Sea and is

also the largest documented specimen collected in the Adriatic. This capture and visual census observations might indicate a range extension of the species in the Adriatic Sea.

One specimen was caught in August 2010 near Koločep Island (Elafiti Archipelago, southern Adriatic) and it is the smallest documented specimen of this species in the eastern Adriatic (Fig. 2).

RESULTS AND DISCUSSION

All specimens were identified in accordance with Jardas (1996) and Orsi Relini *et al.* (1990). Two specimens (total length (TL) = 54.5 cm, 9.3 cm) were deposited in the collection of the Institute of Oceanography and Fisheries in Split. The larger specimen caught near Susak was identified as an immature male based on a macroscopic inspection of the gonads. For morphometric data a board rule and a clock calliper (0.1 mm) were used. Meristic counts were also recorded for the largest and smallest specimens.

The specimen from Susak Island is 545 mm TL and 1230 g in weight, while the specimen from Koločep Island is 92.7 mm TL (Tab. 2). Standard counts and measurements fit well with the previous descriptions of the species, such as in Orsi Relini *et al.* (1990) and Haedrich (1990).

The measured and approximated sizes of individuals were all less than 45 cm TL in shallow water along the coast or offshore, but one was 54.5 cm TL at about a depth of 40 m. The size distribution according to depth corresponds to that reported by Orsi Relini *et al.* (1990): 60–106 cm TL at a depth > 500 m and 25–45 cm TL from the surface to a depth of 40 m. According to same authors, the size of the imperial blackfish specimen of about 45 cm TL corresponds to the first year of life, and taking this into consideration, all specimens from our study were probably immature (with age range between 0+ and 2+).

In the Adriatic, *S. ovalis* was recorded for the first time by Kolombatović (1902) near Korčula Island (southern Adriatic) who wrongly identified it as a new species naming it *Centrophilus corcyrensis* (Tab. 1). The second recorded specimen was caught in 1979 with a deep bottom trawl in the open waters of the southern Adriatic, about 20 NM SE from Dubrovnik (V. Onofri, *pers. comm.*). The third specimen (without measures) of the species was captured together with *S. medusophagus* in the Pelješac Channel (southern Adriatic) in 1982 (at a depth of 2 m) where jellyfish *Pelagia noctiluca* were also present in large quantities (Onofri, 1986). The last record was in 2003 in the open waters of the southern Adriatic, about 35 NM SE from Dubrovnik (Dulčić *et al.*, 2003). Recent records from this study might indicate an expansion of the geographical distribution of the species from southern to northern areas in the Adriatic and the number of observed specimens has significantly increased in recent years (Tab. 1). A continuous expansion of its distribution has already been documented in the

Tab. 2: Biometric and meristic data of *S. ovalis*.

Tab. 2: Biometrični in meristični podatki o vrsti *S. ovalis*.

Parameter	Length(mm) / weight (g)	% of TL	% of head length
TL (mm)	545 / 1230		
Maximum body depth	221.3	40.6	
Head length	142.8	26.2	
Predorsal length	112.8	20.7	
Preventral length	152.6	28	
Preanal length	283.4	52	
Eye diameter	30.7		21.5
Preorbital distance	44.3		31
Postorbital distance	83.1		58.2
Meristic data			
Dorsal fin rays	VIII+30		
Anal fin rays	III+22		
Pectoral fin rays	22		
Ventral fin rays	I+5		
Caudal fin rays	23		
Gill rakers on first arch	16+1+6		
Total length (mm)	92.7		
Maximum body depth	39.9	43	
Head length	32.3	34.8	
Predorsal length	21.2	22.9	
Preventral length	28.3	30.5	
Preanal length	54.6	58.9	
Eye diameter	7		21.7
Preorbital distance	10.3		31.9
Postorbital distance	18.7		57.9
Meristic data			
Dorsal fin rays	VIII+30		
Anal fin rays	III+22		
Pectoral fin rays	23		
Ventral fin rays	I+5		
Caudal fin rays	23		

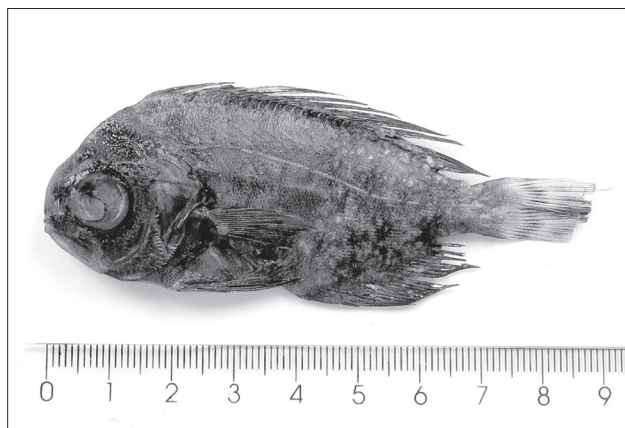


Fig. 2: The caught specimen of *S. ovalis* ($L_t = 9.3$ cm) in August 2010 near Koločep Island (Elafiti Archipelago, southern Adriatic).

Sl. 2: Primerek vrste *S. ovalis* ($L_t = 9,3$ cm), ujet v avgustu 2010 pri otoku Koločep (Elafitsko otočje, južni Jadran).

western Mediterranean during the last decade (Follesa *et al.*, 2006). The distribution extension of *S. ovalis* in the Adriatic Sea could be explained by the warming of the Mediterranean waters (Dulčić *et al.*, 2003), as it has been assumed to account for the increasing occurrence of the imperial blackfish in other regions of the Mediterranean Basin (Francour & Javel, 2003; Corsini-Foka & Frantzis, 2009). Similar cases of distribution extensions are already known for some other fish species in the Adriatic (see Dragičević & Dulčić, 2010).

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NOVI PODATKI O POJAVLJANJU VRSTE *SCHEDOPHILUS OVALIS* (CUVIER, 1833)
(CENTROLOPHIDAE) V JADRANSKEM MORJU

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POVZETEK

Avtorji poročajo o novih najdbah ribje vrste Schedophilus ovalis (Cuvier, 1833) v jadranskih vodah. Ti podatki dopolnjujejo poznavanje o pestrosti jadranske ribje favne in obenem kažejo na širjenje areala južnih jadranskih vrst proti severnim predelom Jadranskega morja.

Ključne besede: *Schedophilus ovalis*, Centrolophidae, širjenje proti severu, Jadransko morje

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