

ADDITIONAL RECORDS AND EXTENSION OF THE RANGE OF BLACKFISH, *CENTROLOPHUS NIGER* (OSTEICHTHYES: CENTROLOPHIDAE) FROM THE TUNISIAN COAST (CENTRAL MEDITERRANEAN SEA)

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ABSTRACT

On 1 May 2018, five specimens of *Centrolophus niger* (Gmelin, 1789) were captured by a shrimp trawler on the sandy bottom at a depth of 35 m in the Gulf of Gabès; they measured between 185 and 433 mm in total length and weighed between 47.9 and 698.8 g. On 17 May 2018, another, single specimen was captured by a shrimp trawler on the sandy-muddy bottom at a depth of 85 m in the Gulf of Tunis; it measured 271 mm in total length and weighed 195.9 g. These additional captures of *C. niger* are indicative of an extension of the range of this species toward southern areas and migration toward lower depths.

Key words: Distribution, additional records, *Centrolophus niger*, extension range, depth, Tunisian waters

NUOVE SEGNALAZIONI E INTERVALLO DI ESPANSIONE DELLA RICCIOLA DI FONDALE, *CENTROLOPHUS NIGER* (OSTEICHTHYES: CENTROLOPHIDAE) LUNGO LA COSTA DELLA TUNISIA (MEDITERRANEO CENTRALE)

SINTESI

Il 1° maggio 2018, cinque esemplari di *Centrolophus niger* (Gmelin, 1789) sono stati catturati da un peschereccio a strascico per la pesca dei gamberi sul fondo sabbioso, a una profondità di 35 m, nel Golfo di Gabès. La loro lunghezza totale variava tra i 185 e i 433 mm, mentre il peso era compreso tra i 47,9 e i 698,8 g. Il 17 maggio 2018, un altro esemplare è stato catturato da un peschereccio a strascico sul fondo sabbioso-fangoso, a una profondità di 85 m, nel Golfo di Tunisi. L'animale misurava 271 mm di lunghezza totale e pesava 195,9 g. Queste nuove catture di *C. niger* indicano un'estensione della distribuzione della specie verso le aree meridionali e la migrazione verso profondità minori.

Parole chiave: distribuzione, segnalazioni aggiuntive, *Centrolophus niger*, estensione, profondità, acque tunisine

INTRODUCTION

Centrolophus niger (Gmelin, 1789) is a pelagic teleost species widely distributed throughout temperate and warm temperate marine waters at depths between 200 and 400 m (Haedrich, 1986). It is also known in the Mediterranean Sea (Haedrich, 1986; Dulčić & Lipej, 2002). Having migrated toward eastern areas, the species is at present reported in the Aegean Sea (Akyol, 2008; Ceyhan & Akyol, 2011), in the Gulf of Iskenderun, off the Mediterranean coast of Turkey (Ergüden et al., 2012), and in the Levant Basin (Golani, 2005). In southern Mediterranean, juvenile forms have been recorded off the Algerian coasts by Dieuzeide et

al. (1955), and a first record has been reported from the Tunisian coast (Capapé et al., 2017). Investigations that are regularly conducted throughout the Tunisian coast have allowed us to collect specimens from local areas where *C. niger* was previously unknown (Bradai et al., 2004).

MATERIAL AND METHODS

On 1 May 2018, five specimens of *Centrolophus niger* were captured on the sandy bottom, 35 m deep, in the Gulf of Gabès, southern Tunisia (37° 07' 96" N and 10° 76' 69" E). On 17 May 2018, another single specimen was captured on the sandy-muddy bottom

Tab. 1: *Centrolophus niger*. The morphometric measurements in mm and as percentages of total length (% TL) and standard length (% SL), meristic counts, and weight (in gram) recorded in two specimens from the Gulf of Gabès (ref. INSTM-Cent-nig-01 and INSTM-Cent-nig-05) and in the specimen from the Gulf of Tunis (ref. INSTM-Cent-nig-06).

Tab. 1: *Centrolophus niger*. Morfometrične meritve in delež celotne dolžine (% TL) ter standardne dolžine (% SL), meristična štetja in teža (v gramih) pri dveh primerkih iz gabeškega zaliva (ref. INSTM-Cent-nig-01 in INSTM-Cent-nig-05) in pri primerku iz tuniškega zaliva (ref. INSTM-Cent-nig-06).

Reference	INSTM-Cent-nig-01			INSTM-Cent-nig-05			INSTM-Cent-nig-06		
	mm	%TL	%SL	mm	%TL	%SL	mm	%TL	%SL
Total length	433	100.0	121.6	185	100.0	127.6	271	100.0	130.9
Fork length	380	87.8	106.7	160	86.5	110.3	226	83.4	109.2
Standard length	356	82.2	100.0	145	78.4	100	207	76.4	100.0
Head length	88	20.3	24.7	55	29.7	37.9	57	21.0	27.5
Pre-orbital length	23	5.3	6.5	13	7.0	9.0	15	5.5	7.2
Pre-dorsal fin length	125	28.9	35.1	84	45.4	57.9	102	37.6	49.3
Pre-pectoral fin length	95	21.9	26.7	64	34.6	44.1	71	26.2	34.3
Pre-anal fin length	192	44.3	53.9	79	42.7	54.5	167	61.6	80.7
Snout length	31	7.2	8.7	20	10.8	13.8	23	8.5	11.1
Eye diameter	19	4.4	5.3	13	7.0	9.0	15	5.5	7.2
Interorbital space	36	8.3	10.1	26	14.1	17.9	33	12.2	15.9
Dorsal fin length	190	43.9	53.4	80	43.2	55.2	155	57.2	74.9
Pectoral fin length	21	4.8	5.9	14	7.6	9.7	16	5.9	7.7
Anal fin length	105	24.2	29.5	78	42.2	53.8	88	32.5	42.5
Pelvic fin length	10	2.3	2.8	7	3.8	4.8	8	3.0	3.9
Body height	120	27.7	33.7	70	37.8	48.3	93	34.3	44.9
Caudal fin length	45	10.4	12.6	31	16.8	21.4	36	13.3	17.4
Counts									
Dorsal rays	V+39			V+37			V+38		
Pectoral rays	22			22			22		
Pelvic rays	5			5			5		
Anal rays	III+22			III+21			III+21		
Caudal rays	20			20			20		
Scales on lateral line	167			165			165		

at a depth of 85 m in the Gulf of Tunis, northeastern Tunisia (34° 43' 70" N and 10° 86' 08" E). All specimens were caught by shrimp trawlers. They were measured by digital calliper to the nearest millimetre and weighed to the nearest decigram. Morphometric measurements, percentages of total length (TL) and standard length (SL), and meristic counts were recorded following Capapé *et al.* (2017) and summarized in Table 1. All specimens were fixed in 10% buffered formalin, preserved in 75% ethanol and deposited in the Ichthyological Collection of the Institute des Sciences et Technologies de la Mer of Salammbô (Tunisia). The specimens collected from the Gulf of Gabès (Fig. 1) received catalogue numbers INSTM-Cent-nig-01 through INSTM-Cent-nig-05, and the specimen from the Gulf of Tunis received the catalogue number INSTM-Cent-nig-06.

RESULTS AND DISCUSSION

The Tunisian *Centrolophus niger* was identified by the following combination of characters: elongate, oval, slightly compressed body with a long, compressed caudal peduncle, small head with pores in the naked skin, large mouth without teeth on palate; eyes large and bright; a single long dorsal, originating slightly behind the head of the pectoral fin base; lateral line slightly arched, with small scales; colour ranges from chocolate brown to dark bluish, with black-edged fins.

The description, measurements and percentages of TL and SL (Table 1) recorded in the Tunisian specimens of *C. niger* are in total accordance with previous descriptions of the species, provided by Headrich (1986), Akyol (2008), Ceyhan & Akyol (2011), Ergüden *et al.* (2012) and Capapé *et al.* (2017). *C. niger* is an uncommon species in the areas where it was previously recorded.

The first well-documented discovery of *Centrolophus niger* occurred off Ras Jebel, close to the Cani Rocks in northern Tunisia (Fig. 2). Capapé *et al.* (2017) noted that such a finding could probably corroborate a southward extension of *C. niger* in the Mediterranean Sea, supporting the first confirmed record of a large specimen in this area in 1986 (Haedrich, 1986). These additional captures of *C. niger* attest to an extension of the range of the species toward southern areas and migration toward lower depths. The presence of small and large specimens suggests that a viable population of *C. niger* is probably established throughout the Tunisian coast. It could also indicate migration from western regions or a population established in poorly explored areas, but such hypotheses remain questionable.

Capapé *et al.* (2017) noted an increase in captures of *Centrolophus niger* in the eastern Mediterranean coast of Turkey (Akyol, 2008; Ceyhan & Akyol, 2011; Ergüden *et al.*, 2012) and suggested it could result from water warming (see Francour *et al.*, 1994; Ben Raïs Lasram & Mouillot, 2009). Such a phenomenon could also explain the recorded occurrence of the species in

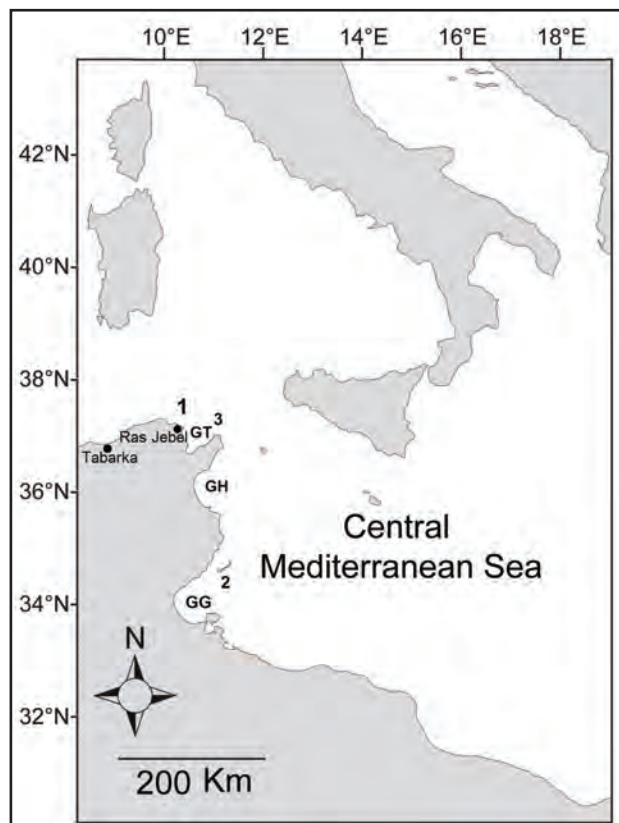


Fig. 2: *Centrolophus niger*. Map of the Central Mediterranean Sea copied from Ben Amor *et al.* (2016) with capture sites of the specimens caught in the Tunisian waters indicated: 1. between Ras Jebel and the Cani Rocks (1), off the northern Tunisian coast (Capapé *et al.*, 2017); 2. in the Gulf of Gabès (GG); 3. in the Gulf of Tunis (GT). GH = Gulf of Hammamet.

Sl. 2: *Centrolophus niger*. Zemljevid osrednjega Sredozemskega morja, prirejen po Ben Amor s sod. (2016) z označenimi lokalitetami, kjer so bili ujeti primerki v tunizijskih vodah: 1. med lokalitetami Ras Jebel in Cani Rocks (1), ob severni tunizijski obali (Capapé *et al.*, 2017); 2. v gabeškem zalivu (GG); 3. v tuniškem zalivu (GT). GH = Hammameški zaliv.

Tunisian waters, yet an improvement of monitoring in the area as a factor cannot be totally ruled out either. The drastic decline of local fisheries due to fishing pressure has forced the fishermen to keep and try to sell in landing sites and/or fish markets even species with poor economic value, instead of discarding them at sea, like they used to.

Similar patterns were reported by Capapé *et al.* (2018) for sharpnose sevengill shark *Heptanchias perlo* (Bonnaterre, 1788), a species previously captured off the northern coast of Tunisia, on deep-sea bottoms (El Kamel-Moutalibi *et al.*, 2014), which has been recently observed at lower depths and in southern Tunisian areas.



Fig. 1: The *Centrolophus niger* specimen (ref. INSTM-Cent-nig-01) captured in the Gulf of Gabès; scale bar = 80 mm.

Sl. 1: Primerek vrste *Centrolophus niger* (ref. INSTM-Cent-nig-01), ujet v gabeškem zalivu; merilo = 80 mm.

NOVI ZAPIS O POJAVLJANJU ČRNUHA, *CENTROLOPHUS NIGER* (OSTEICHTHYES: CENTROLOPHIDAE) IZ TUNIZIJSKE OBALE (OSREDNJE SREDOZEMSKO MORJE)

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POVZETEK

Prvega maja 2018 so ujeli pet primerkov črnuha *Centrolophus niger* (Gmelin, 1789) v mrežo za kozice na peščenem dnu na globini 35 m v Gabeškem zalivu. V dolžino so merili med 185 in 433 mm in tehtali med 47,9 in 698,8 g. Sedemnajstega maja je bil v mrežo za kozice ujet še en primerek te vrste na muljevito-peščenem dnu na 85 m globine v tuniškem zalivu. V dolžino je meril 271 mm in tehtal 195,9 g. Ti novi podatki o vrsti *C. niger* kažejo na razširitev areala te vrste v smeri proti jugu in pojavljanju v plitvejših globinah.

Ključne besede: razširjenost, novi podatki, *Centrolophus niger*, širjenje areala, globina, tunizijske vode

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