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CONFIRMED OCCURRENCE OF PHARAOH CARDINAL FISH *APOGONICHTHYOIDES PHARAONIS* (OSTEICHTHYES: APOGONIDAE) FROM THE SYRIAN COAST (EASTERN MEDITERRANEAN SEA)

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ABSTRACT

The paper documents the capture of a second specimen of pharaoh cardinal fish Apogonichthyoides pharaonis *(Bellotti, 1874) from the Syrian coast. The specimen was an adult measuring 97 mm in total length (TL), 75 mm in standard length (SL), and weighing 19 g. This capture serves as confirmation of the presence of a viable population of A. pharaonis in the area, indicating it has found here adequate resources for development and reproduction.*

Key words: Apogonidae, distribution, population, Levant Basin

PRESENZA CONFERMATA DI *APOGONICHTHYOIDES PHARAONIS* (OSTEICHTHYES: APOGONIDAE) LUNGO LA COSTA SIRIANA (MAR MEDITERRANEO ORIENTALE)

SINTESI

L'articolo documenta la cattura di un secondo esemplare di Apogonichthyoides pharaonis *(Bellotti, 1874) lungo le coste siriane. L'esemplare in questione è un adulto di 97 mm di lunghezza totale (TL), 75 mm di lunghezza standard (SL) e 19 g di peso. Questa cattura conferma la presenza di una popolazione vitale di A. pharaonis nell'area, indicando che la specie abbia trovato qui risorse adeguate allo sviluppo e la riproduzione.*

Parole chiave: Apogonidae, distribuzione, popolazione, Bacino del Levante

INTRODUCTION

The pharaoh cardinal fish *Apogonichthyoides pharaonis* (Bellotti, 1874) is a Lessepsian migrant (*sensu* Por, 1971), originating from the Red Sea and the western Indian Ocean, which entered the Mediterranean Sea through the Suez Canal. The first recorded instances occurred off Port-Saïd, Egypt (Norman, 1927) and subsequently in the Palestinian coast, but the species was initially misidentified as *Apogon taeniatus* by Haas & Steinitz (1947). *A. pharaonis* has since been reported in various areas of the eastern Mediterranean, particularly the Levant Basin, where a viable population is successfully established (Golani *et al.*, 2021). To the west, the species has been recorded off the Egyptian coast (Ragheb *et al.*, 2019) and as far as Libyan waters (Al Mabruk *et al.*, 2021).

The first specimen of *A. pharaonis* was recorded from the Syrian coast in 1992, but was originally misidentified as *A. taeniatus* following Sbaihi & Saad (1995). Subsequent investigations focussing on non-indigenous species, conducted in Syrian marine waters, and actively supported by local fishermen, allowed the researchers to collect the *A. pharaonis* specimen that is herein described in detail and provided with comments about the species' distribution.

Tab. 1: Morphometric measurements with percentages of total length (TL), counts and total body weight recorded in the specimen reported by Sbaihi & Saad (1995) and in the present specimen.
Tab. 1: Morfometrične meritve z deležem totalne dolžine, merističnim štetjem in celokupno težo primerkov, ki ju navajata Sbaihi in Saad (1995) in iz pričujoče raziskave.

References	**Sbaihi & Saad (1995)**		**This study**	
Morphometric measurements	mm	% TL	mm	% TL
Total length	105	100.0	97	100.0
Standar length	93	88.6	75	77.3
Body depth	34	32.4	32.	32.9
Head length	32	30.4	32	32.9
Eye diameter	8	7.6	8	8.2
Length of dorsal fin base	-	-	14	14.4
Length of Anal fin base	-	-	13	13.4
Pre-pectoral length	-	-	30	30.9
Pre-anal length	-	-	52	53.6
Pre-pelvic length	-	-	28	28.9
Meristic counts				
First dorsal fin rays	VII		VII	
Second dorsal fin rays	I +8		I +8	
Ventral fin rays	-		I +5	
Pectoral fin rays	-		15	
Anal fin rays	II + 6		II + 6	
Total body weight in gram	-		19	

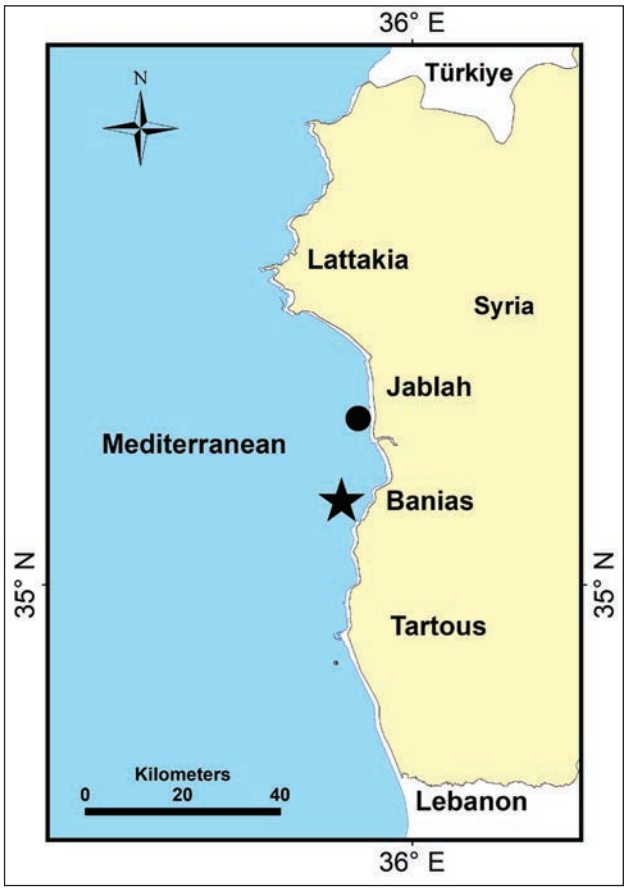

Fig. 1: Map of the Syrian coast indicating the capture sites of the two** Apogonichthyoides pharaonis **specimens, with the black star marking the specimen collected in the present study and the black circle representing the specimen described in Sbaihi & Saad (1995).
Sl. 1: Zemljevid sirske obale z označenimi lokalitetami ulova dveh primerkov vrste** Apogonichthyoides pharaonis**. Črna zvezdica označuje lokaliteto ulova primerka iz pričujoče raziskave, črni krogec pa označuje lokaliteto ulova primerka iz raziskave Sbaihi in Saad (1995).

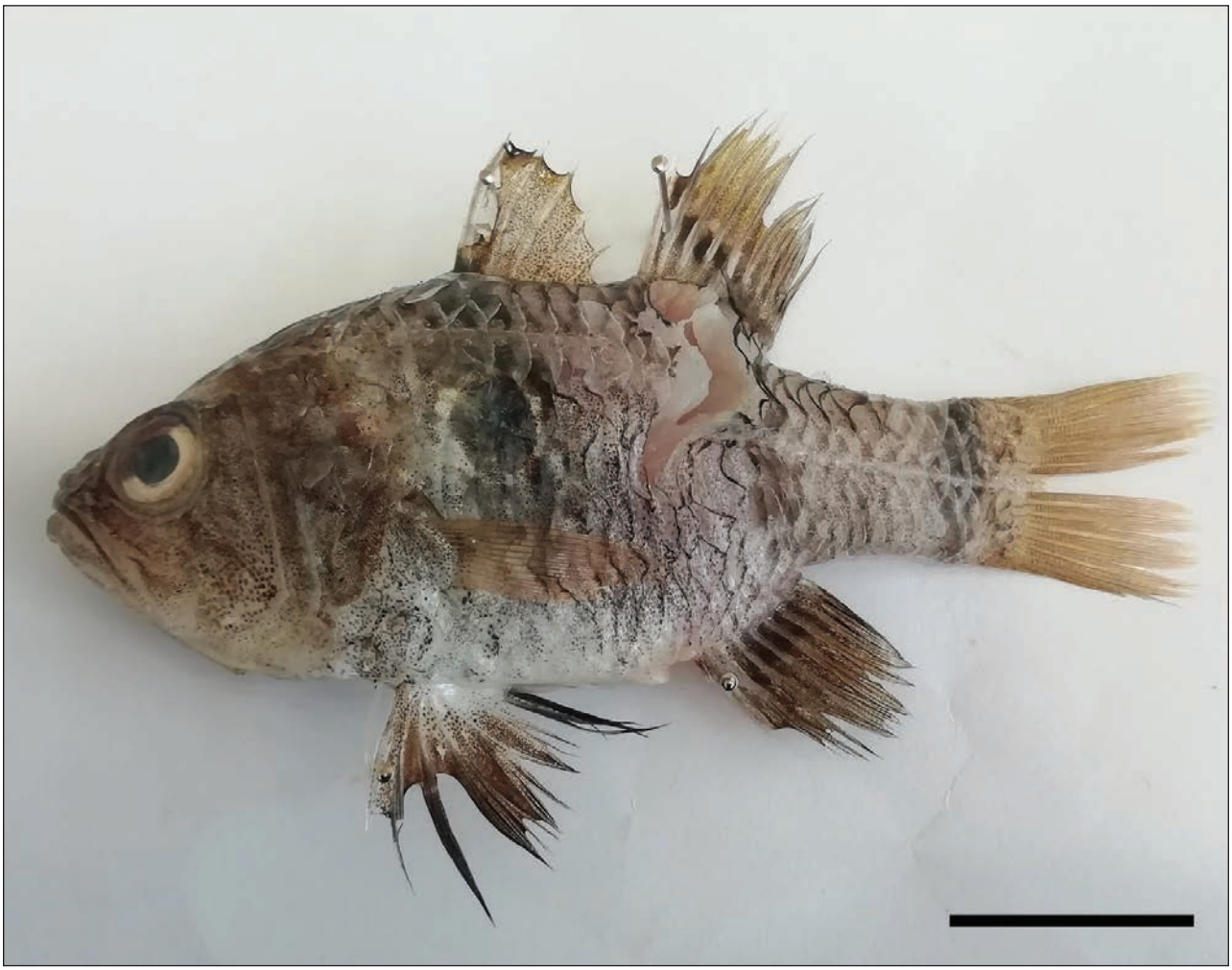

Fig. 2. Specimen of *Apogonichthyoides pharaonis* ***captured off Banias, Syrian coast (scale bar = 20 mm).***
Sl. 2: Primerek vrste *Apogonichthyoides pharaonis****, ujet v vodah pri lokaliteti Banias ob sirski obali (merilo = 20 mm).***

MATERIAL AND METHODS

The present specimen of *A. pharaonis* was caught on 22 September 2022, by a spear fisher at a depth of 12 metres, on sandy-pebbly bottom, south of Banias, a city located on the Syrian coast (at 35°63′45′′ N and 35°53′12′′ E, Fig. 1). The measurements of the specimen were taken using callipers and recorded to the nearest millimetre; its total body weight (TBW) was determined and rounded to the nearest gram. Morphometric measurements with percentages of total length are provided in Table 1, along with data pertaining to the specimen discovered by Sbaihi & Saad (1995). The more recently captured specimen was fixed in a 10% buffered formaldehyde solution, preserved in 75% ethanol, and deposited in the collection of the Marine Sciences Laboratory at Tishreen University, catalogue number MSL 24-2023.

RESULTS AND DISCUSSION

This particular specimen of *A. pharaonis* measured 97 mm in total length (TL), 75 mm in standard length (SL), and weighed 19 g in TBW (Fig. 2). It was identified as *A. pharaonis* based on a combination of distinct morphological characters: body oblong and laterally compressed; two distinct dorsal fins, the first displaying two very short spines and a longer third one, and the second exhibiting a single spine; origin of the pelvic fin under the base of the pectoral fin; truncate tail; relatively large eyes; three vertical black bars on a grey-brown background, with the first bar located under the first dorsal fin and featuring a black eye-like spot encircled by a yellow ring at the midside, the second bar starting under the second dorsal fin and extending to the tip of the fin, and the third bar positioned on the caudal peduncle; a fourth brownish bar was noted

at the base of the caudal fin. The patterns observed in the present specimen were consistent with those documented by Sbaihi & Saad (1995). The description, measurements, counts and coloration are in complete agreement with Gon & Randall (2003), Al Mabruk *et al*. (2021), and Golani *et al*. (2021).

The pharaoh cardinal fish is one of the earliest non-indigenous fish species documented in the Mediterranean Sea (Golani *et al*., 2021). This second discovery of this Lessepsian migrant in Syrian waters, occurring approximately 30 years after its first record, provides unequivocal confirmation that *A. pharaonis* has become part of the Syrian ichthyofauna. The current finding could also indicate that a viable population of *A. pharaonis* has successfully established itself in the studied area, mirroring the situation observed in the entire Levant Basin. It should be noted that, based on its initial record, the pharaoh cardinal fish has been recognised as an established Lessepsian species in Syrian waters (Ali, 2018). The common size range of *A. pharaonis* individuals is between 50 and 80 mm, with a maximum reported size of 120 mm (Golani *et al*., 2021) and the smallest mature female on record attaining only 34 mm in total length (Gon & Randall, 2003). Consequently, both *A. pharaonis* specimens caught in Syrian waters were large adult individuals, suggesting that the species is able to find sufficient resources for growth and reproduction in the region. However, *A. pharaonis* still appears to be relatively uncommon in the area, likely due to a combination of factors. Its small size and lack of a streamlined swimmer morphology may render the fish vulnerable to predators, thus limiting its abundance. Also, being small, it can easily escape through the meshes of fishing nets and is most often caught by spear fishers (see Al Mabruk *et al*., 2021), as was the case in our study. Finally, monitoring the species' abundance is challenging due to its nocturnal habits, and its relatively low economic value further discourages thorough observation. Additionally, it is likely that, as in other Mediterranean regions (Ragheb *et al*., 2019), *A. pharaonis* is discarded by fishermen in Syria after capture.

POTRJENO POJAVLJANJE FARAONSKEGA KRALJIČKA *APOGONICHTHYOIDES PHARAONIS* (OSTEICHTHYES: APOGONIDAE) IZ SIRSKE OBALE (VZHODNO SREDOZEMSKO MORJE)

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POVZETEK

Avtorja poročata o najdbi drugega primerka faraonskega kraljička, Apogonichthyoides pharaonis *(Bellotti, 1874), iz sirske obale. Primerek je bil odrasel in meril 97 mm v celokupno dolžino (TL), 75 mm v standardno dolžino (SL) in tehtal 19 g. Ta ulov potrjuje prisotnost viabilne populacije vrste A. pharaonis na obravnavanem območju in kaže, da je tu našla primerne vire za razvoj in razmnoževanje.*

Ključne besede: Apogonidae, razširjenost, populacija, levantski bazen

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