

MALEK ALI¹, VIENNA HAMMOUD², AOLA FANDI³, CHRISTIAN CAPAPÉ⁴

¹ Marine Sciences Laboratory, Production Animal Department, Faculty of Agriculture,
Tishreen University, Lattakia, Syria,

² Biology Department, Faculty of Sciences, Tartous University, Tartous, Syria

³ Environmental Prevention Department, Higher Institute for Environmental Research,
Tishreen University, Lattakia, Syria

⁴ Laboratoire d'Ichtyologie, Université de Montpellier, 34095 Montpellier cedex 5, France
Corresponding author: email: christian.capape@umontpellier.fr

RECORD OF A JUVENILE EMPEROR ANGELFISH, *POMACANTHUS IMPERATOR* (POMACANTHIDAE) FROM THE SYRIAN COAST (EASTERN MEDITERRANEAN SEA)

SUMMARY

The authors report on the capture of a juvenile specimen of emperor angelfish *Pomacanthus imperator* (Bloch, 1787) from the Syrian coast. It was a small sized specimen which measured of 122 mm total length (TL), 97 mm standard length (SL) and weighed 47 g. The specimen was described including some morphometric measurements and meristic counts and compared with a large specimen. This rare finding represents the third record of the species for the Syrian waters. It constitutes also the first juvenile *P. imperator* but also for the Levant Basin and the Mediterranean Sea, suggesting the successful establishment of the substantial population in the region.

INTRODUCTION

Emperor angelfish, *Pomacanthus imperator* (Bloch, 1787) is widely distributed in the Indo-Pacific, from Red Sea to Japan (PYLE *et al.*, 2010). The first Mediterranean record of the species was reported in the Levant Basin by GOLANI *et al.* (2010) and other specimens from the same area (ROTHMAN and STERN, 2019; GOLANI *et al.*, 2021). From the Syrian coast, CAPAPÉ *et al.* (2018) reported the capture of a specimen on 13 July 2017 and SAAD *et al.* (2018) on 18 February 2018. GÜRIEK *et al.* (2019) noted the record of a specimen from Turkish marine waters and AL MABRUK *et al.* (2021), from the Mediterranean coast of Egypt.

Following our investigations from on the Syrian marine waters in collaboration with local fishermen aware of fishing grounds, a juvenile specimen of *P. imperator* was collected, described and compared with the adult form. From this new finding, we comment on the occurrence of the species in the area and in the Mediterranean Sea.

MATERIAL AND METHODS

The present specimen of *Pomacanthus imperator* was caught on 19 September 2022, 20 km off the thermal plant opposite of Baniyas city by 35° 10' N and 35° 42' E (Fig. 1). The capture occurred at depth of about 40 m, using a bottom metal cage. The captured site was located over a rocky bottom covered with small sandy spaces. Other alien species were founded together with *P. imperator* into the same trap such as lion fish *Pterois miles* (Bennett, 1803) and dusky spinefoot *Siganus luridus* (Rüppell 1829), but also economic native species such glodblotch grouper *Epinephelus costae* (Steindachner, 1878) and Sparidae species. Measurements carried out to the nearest millimetre and meristic counts followed GOLANI *et al.* (2010); they are summarized with percentages of standard length (%SL) and total length

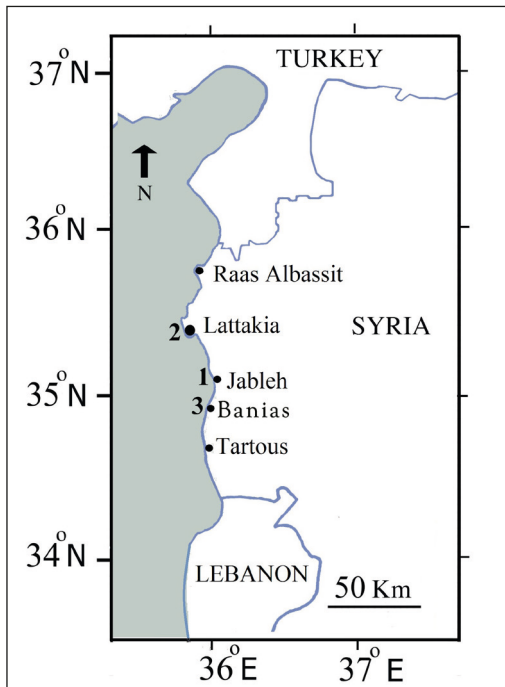


Fig. 1. Map of the Syrian coast indicating by chronological order the capture sites of *Pomacanthus imperator* (Bloch, 1787) in the area. 1. Capapé *et al.* (2018). 2. Saad *et al.* (2018). 3. This study.

(%TL) in Table 1, together with those previously reported for an adult specimen caught in the same area (see CAPAPÉ *et al.*, 2018). The specimen was fixed in 10% buffered formalin, preserved in 75% ethanol, and deposited in the Ichthyological Collection of the Environmental Research Higher Institute for Environmental Research, Tishreen University, under catalogue number 73 - 2022 ERHI.

Table 1. Measurements in mm with % of total length (TL), standard length (% SL), meristic counts and total body weight carried out in both specimens of *Pomacanthus imperator* (Bloch, 1787), juvenile and adult collected from the Syrian marine waters.

Reference of specimen	Capapé et al. (2018)			This study		
	TL	%SL	%TL	TL	%SL	%TL
Morphometric measurements						
Total length	326	118.1	100.0	122	125.8	100.0
Standard length	276	100.0	84.7	97	100.0	79.5
Head length	77	27.9	23.6	23	23.7	18.9
Body depth	154	55.8	47.2	35	36.1	28.7
Interorbital space	24	8.7	7.4	11	9.0	11.3
Eye diameter	14	5.1	4.3	8	8.2	6.6
Preorbital length	35	12.7	10.7	9	7.4	9.3
Snout length	25	9.1	7.7	11	11.3	9.0
Dorsal fin length	212	76.8	65.0	76	62.3	68.4
Pectoral fin length	68	24.6	20.9	20	20.6	16.4
Pelvic fin length	89	32.2	27.3	22	22.7	18.0
Anal fin length	123	44.6	37.7	26	26.8	21.3
Pre-pectoral length	71	25.7	21.8	38	39.2	31.1
Pre-dorsal length	90	32.6	27.6	40	41.2	32.8
Pre-pelvic length	86	31.2	26.4	30	30.9	24.6
Pre-anal length	169	61.2	51.8	68	70.1	55.7
Total weight (g)	1232			47		
Meristic counts						
Dorsal fin rays	XIV +20			XIV + 19		
Pectoral fin rays	18			18		
Pelvic fin rays	I + 5			I+5		
Anal fin rays	III+ 19			III+17		
Caudal fin rays	16			17		
Lateral line scales	77			72		

RESULTS AND DISCUSSION

The juvenile specimen of *Pomacanthus imperator* measured 122 mm TL, 97 mm SL and weighed 47 g. The juvenile is rounded, blackish blue with circular white and blue stripes starting at the tail. The head is short curving progressively with a minute mouth. The fish will vary in coloration and pattern as it transforms from juvenile to the adult coloration (Fig. 2A). The adult is oval shaped, compressed deep body, blue covered with bright yellow horizontal stripes culminating in a bright yellow to orange caudal fin. A striking blue-black mask covers the eyes and a similarly-colored vertical band extends from the pectoral fin two-thirds of the way up the body. This band is highlighted in a sapphire-blue in front, and bright yellow, caudally. The mouth is white (Fig. 2B).

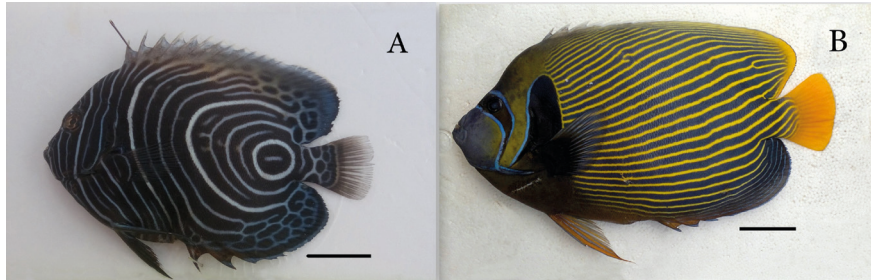


Fig. 2. *Pomacanthus imperator* (Bloch, 1787). A. Juvenile specimen (Ref.73-2002-EHRI) from this study, scale bar = 20 mm. B. Large specimen (Ref.) from Capapé *et al.* (2018), scale bar = 50 mm.

Juvenile and adult specimens are different in shape and mainly in colour, the former are globally smaller as indicated in Table 1 by the number of scales on the lateral line. Morphometric measurements, meristic counts and colour of the juvenile *Pomacanthus imperator* are in total agreement with ALLEN *et al.* (1998) and GOLANI *et al.* (2021). This specimen constitutes the third record of the species from the Syrian coast (see Fig. 1), but also the first juvenile not only for the area but also for the Levant Basin and for the Mediterranean Sea. Such a record confirms the opinion of ROTHMAN and STERN (2019) who noted the species is at present successfully established in the eastern Mediterranean Sea. An aquarium release cannot be totally ruled out, but the occurrence of the juvenile specimen suggests that it is rather native from the area, where *Pomacanthus imperator* as other non indigenous species found favorable parameters to live and reproduce (ALI, 2018).

ACKNOWLEDGEMENTS

The authors wish to thank Mr Ali Moussa for his assistance allowing to collect the present specimen of *Pomacanthus imperator*.

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