

## First record of arrow bulleye, *Priacanthus sagittarius* Starnes, 1988 from the Syrian marine waters (Eastern Mediterranean)

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### Abstract

Priacanthids are found in the tropical and subtropical waters with four record from the Mediterranean Sea. This study is report the arrow bulleye, *Priacanthus sagittarius* for first time from the Banyas coast, Syria, where a single specimen was caught in a depth of 100-125 m, above a rocky bottom.

**Keywords:** Priacanthidae, Bigeyes, Lessepsian, Syrian coast.

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### Introduction

Priacanthidae (Bigeyes) are distributed in tropical and subtropical waters, generally in rocky bottoms or coral reefs (Carpenter and De Angelis 2016). To date, 19 Priacanthid species have been identified with four reported in the Mediterranean Sea, viz. *Priacanthus arenatus* Cuvier, 1829, *P. sagittarius* (Starnes, 1988) (Froese and Pauly 2019), *P. hamrur* (Forsskål, 1775) (Erguden et al. 2018) and *P. prolixus* Starnes, 1988 (Gürlek et al. 2017). The arrow bulleye, *P. sagittarius* Starnes, 1988, a lessepsian migrant (Farrag et al. 2016), was recorded for the first time in the south-east, Ashdod coast (Goren et al. 2010), and then in the north-east, Mersin coast (Erguden et al. 2018; Gökoğlu and Teker 2018), and in the south, Alexandria coast (Farrag et al. 2016) of the eastern Mediterranean. This study presents the first record of the arrow bulleye from the Syrian marine waters.

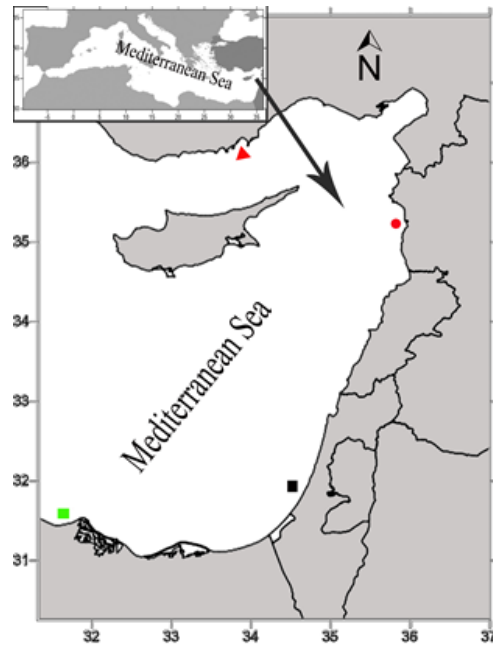
### Material and Methods

On 15 March 2019, a field trip was carried out in the marine water of Banyas city, Syria (35°14'35.11"N, 35°55'12.56" E, Fig. 1). Sample of *P. sagittarius* were collected using a longline and the identified based on Carpenter and De Angelis (2016). The morphometric measurements (length to the nearest mm, weight to the nearest g), and meristic counts were recorded. The fish was photographed, then preserved in 7% formaldehyde and placed at the Biological Laboratory of the High Institute of Marine Research (Tishreen University-Lattakia, Syria) as a reference sample (unnumbered yet).

### Results

A single specimen of the arrow bulleye (Fig. 2) was caught from a depth of 100-125 m off Banyas coast, above a rocky bottom. Some other fish species coexisted in the area were *Epinephelus aeneus*, *E. costae*, *Pagrus caeruleostictus*, *Scorpaena scrofa*, *Seriola dumerili*, *E. marginatus*, *Dentex dentex*, *Diplodus vulgaris*...etc.). The specimen of *P. sagittarius* had the following diagnostic characteristics: Wide, long and compressed body; big eyes and large superior mouth; continuous dorsal fin with round shape along soft rays; large pelvic-fin, relatively small pectoral-fin; and caudal fin truncate.

In terms of colouration, the body was pink reddish with dark-red dorsal section. The dorsal, pelvic, anal and caudal fins were light red. The margins of the dorsal, anal and caudal fins were dark. The iris was light red. The fin formula was: D: X+13; P:18; V: I+5, A: III+13, C: 15-16. These features of *P. sagittarius* are in full agreement with Goren et al. (2010) and Carpenter and De Angelis (2016) (Table 1).



**Figure 1.** A map showing the distribution of *Priacanthus sagittarius*: ■ for Goren et al., 2010; ■ for Farrag et al. (2016); ▲ for Gökoğlu and Teker, 2018; ● Present study.



**Figure 2.** *Priacanthus sagittarius* Starnes, 1988, caught on 15-3-2019 from the marine water of Syria.

## Discussion

The arrow bulleye, *P. sagittarius* has been recorded previously in the northeast (Gökoğlu and Teker 2018), southeast (Goren et al. 2010), and south (Farrag et al. 2016) of the eastern Mediterranean. This study reveals that *P. sagittarius* also is found in the marine water of Syria. The lack of scientific research in the study area (Alshawy et al. 2017), and the ignorance of fishermen to this species may had led this species not to be recorded previously in the Syrian marine waters. This occurrence fills the gap in its distribution along the eastern coast of the Mediterranean between the Ashdod (Goren et al. 2010) and Mersin (Gökoğlu and Teker 2018). It is the only species of Priacanthidae found in the Syrian marine water (Ali 2018). The presence of this species along the eastern coast of the Mediterranean gives a primary indication of the environmental changes that facilitate the introduction of tropical and subtropical species into this area (Ibrahim 2008; 2009; Hussein et al. 2011; Alshawy et al. 2019b), and provides further evidence of the exotic species continuous invasion to this area (Ibrahim et al. 2002; RAC 2009; Hallom et al. 2014; Alshawy et al. 2017; Alshawy et al. 2019a). More work

**Table 1.** Morphometric data of *Priacanthus sagittarius* caught from the marine water of Syria and other records from Mediterranean Sea.

Features	Morphometric measurement (mm or g)			
	Present study	Farrag et al. (2016)	Gökoğlu and Teker (2018)	Goren et al. (2010)
Standard length (SL)	154	108	NT	84% TL
Total length	193	129	255	NT
Body depth	60 (38.96%SL)	44(40.37%SL)	NT	38%SL
Head length	53(34.42%SL)	40(37%SL)	NT	32%SL
Eye diameter	21 (13.64%SL)	18	NT	48%HL
Snout length	14 (9.09%SL)	NT	NT	NR
Upper jaw length	7 (4.55%SL)	NR	NR	NR
Lower jaw length	26 (16.88%SL)	NR	NR	NR
Dorsal fin length	85 (55.19%SL)	NR	NR	NR
Pectoral fin length	30(19.4%SL)	NR	NR	NR
Pelvic fin length	55 (35.71%SL)	NR	NR	NR
Anal fin length	50 (32.47%SL)	NR	NR	NR
Caudal fin length	33(21.43%SL)	NR	NR	NR
Pre-dorsal length	46 (29.87%SL)	89(82.4%SL)	NR	NR
Pre-pectoral length	47(30.52%SL)	40(37%SL)	NR	NR
Pre-pelvic length	39 (25.32%SL)	33(30.6%SL)	NR	NR
Pre-anal length	84 (54.55%SL)	61(56.5%SL)	NR	NR
Total weight	121g	NR	307g	NR

NR: not recorded, SL: stander length, TL: total length, HL: head length

should be done to provide evidence of *P. sagittarius* establishment in the area, and highlights the ecological and economic cosequences in regards of its effects on marine biodiversity, and on native fish populations. This calls for effective and strong regional and international collaborations to manage such species (Vallerga et al. 2003; Drago et al. 2004) and to protect local fish populations (Hussein et al. 2011a, b; Alshawy et al. 2019c).

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