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FIRST SUBSTANTIATED RECORD OF THE STARRY RAY *RAJA* *ASTERIAS* (RAJIDAE) FROM THE SYRIAN COAST (EASTERN MEDITERRANEAN SEA)

SUMMARY

The present paper reports on the first record of the starry ray *Raja asterias* Delaroche, 1809, in the Syrian marine waters (eastern Mediterranean Sea). The specimen measured 334 mm in disc width (DW), and weighed 551 g for total body weight (TBW). Morphometric measurements were recorded to the nearest millimeter and reported as percentage of the disc width (%DW). The specimen photographed, preserved in 10% buffered formaldehyde, and deposited in the ichthyological collection of the Fish Laboratory, Agriculture Faculty of Latakia University, Syria. This finding extends the distribution range of the species in the Mediterranean Sea, and contributes to the growing knowledge of chondrichthyan biodiversity from the Syrian coast.

INTRODUCTION

The starry ray *Raja asterias* Delaroche, 1809 is known in the entire Mediterranean Sea but appears to be less common in the eastern part (STEHMANN and BÜRKEL, 1984; FAO, 2009; EBERT and STEHMANN, 2013). In the western and central Mediterranean, *R. asterias* is more abundant in the Ligurian Sea (BARONE *et al.*, 2007), Tyrrhenian Sea (ROMANELLI *et al.*, 2007), Adriatic Sea (FERRÀ *et al.*, 2016), and from the coast of Tunisia (CAPAPÉ, 1980), Algeria (HEMIDA *et al.*, 2007), and Morocco (FATIMETOU and YOUNES, 2016). The IUCN Red List assessed *R. asterias* as a near threatened species (SERENA *et al.*, 2015). The species is absent in the Black Sea (ORDINES *et al.*, 2017). Its occurrence in the Sea of Marmara remains doubtful and records of *R. asterias* have been misidentified with atypically colored specimens of the thornback ray *R. clavata* Linnaeus, 1758 according to KABASAKAL *et al.* (2025). To the east, the species

is reported from the Turkish waters (BILECENOĞLU *et al.*, 2014), Lebanon (BITAR and BADREDDINE, 2020), the Levant Basin (GOLANI, 2005), and in Egypt (FARRAG, 2016; EL SAYED *et al.*, 2017).

The occurrence of *Raja asterias* in the Atlantic Ocean has been suggested by STEHMANN and BÜRKEL (1984). The species was found by COELHO *et al.* (2005) off the southern coast of Portugal and by ORDINES *et al.* (2017) in the Gulf of Cádiz. TAI *et al.* (2021) noted that *R. asterias* is commonly caught from the northern Atlantic Moroccan coast. Conversely, the starry ray was not recorded from the coast of Mauritania (KNORRN *et al.*, 2025).

Recently, investigation conducted along the Syrian coast allowed the capture of a specimen of *Raja asterias*. This record forms the subject of the present paper, herein described and commented on with respect to its distribution in the Mediterranean Sea.

MATERIALS AND METHODS

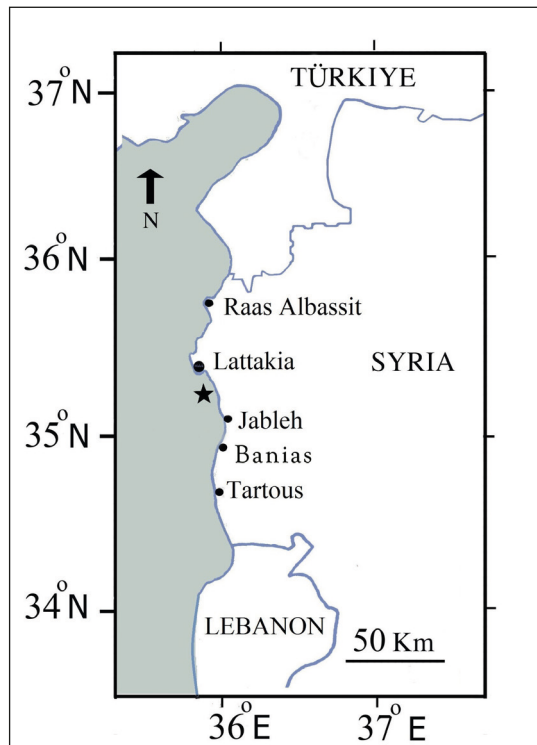


Fig. 1. Map of the Syrian coast with black star indicating the capture site of *Raja asterias* (Ref. 2034 FL).

On 22 December 2025, a male specimen of *Raja asterias* has been caught from the Syrian coast, using trammel net, at a depth of about 30 m, on a sandy bottom, 14 km south of Lattakia City, by $35^{\circ} 25' 00.29''$ N, and $35^{\circ} 52' 42.63''$ E (Fig. 1). The specimen was identified according to field guides (SERENA (2005); EBERT and STEHMANN, 2013). Thirty morphometric measurements, recorded to the nearest millimeter are summarized in Table 1, along with percentages of disc width (% DW) and the total body weight to the nearest gram.

The specimen was photographed, preserved in 10% buffered formaldehyde, and deposited in the

Ichthyological Collection of the Fish Laboratory (FL) at the Faculty of Agriculture, Latakia University, Syria, under the reference number 2334 FL (Fig. 2).

The protocols from BELLO *et al.* (2014) for a first fish record and SALAMEH *et al.* (2012) for a first substantiated record were followed.

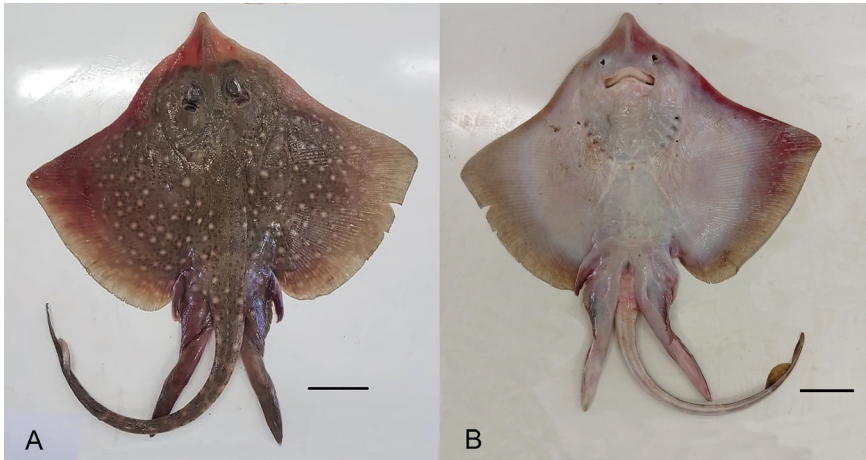


Fig. 2. *Raja asterias*. (Ref. 2034 FL). **A.** Dorsal surface, scale bar =50mm. **B.** Ventral surface, scale bar =50mm.

RESULTS AND DISCUSSION

The specimen measured 334 mm in disc width (DW), 510 mm in total length (TL), and weighed 551 g. It was classified as *Raja asterias* based on the combination of the following morphological characters: snout short, a line from tip of snout to pectoral wing-tip touching front margin of disc. some thorns arranged in rows (Fig. 3); four rows of malar thorns on the left pectoral fin (4,3,3,2), and three on the right (4,3,7), in addition to two patches of malar thorns near the front margins of pectoral fins (Fig. 3 A), thorns on the orbitals. 51 small thorns in irregular median row from nape to first dorsal fin (interrupted on body), two thorns between dorsal fins, dorsal fin bases shorter than space between them, numerous scattered dark spots, as rosettes and partly surrounding lighter and larger spots (Fig. 3), ventral side smooth, white, with grey margin around the disc, without definite dark markings, 38-40 rows of teeth in the jaws.

The specimen exhibits well developed and rigid claspers, larger than the pelvic fin; both testes were developed, the genital ducts were convoluted and sperm was found. It was an adult male following CAPAPÉ (1977) who

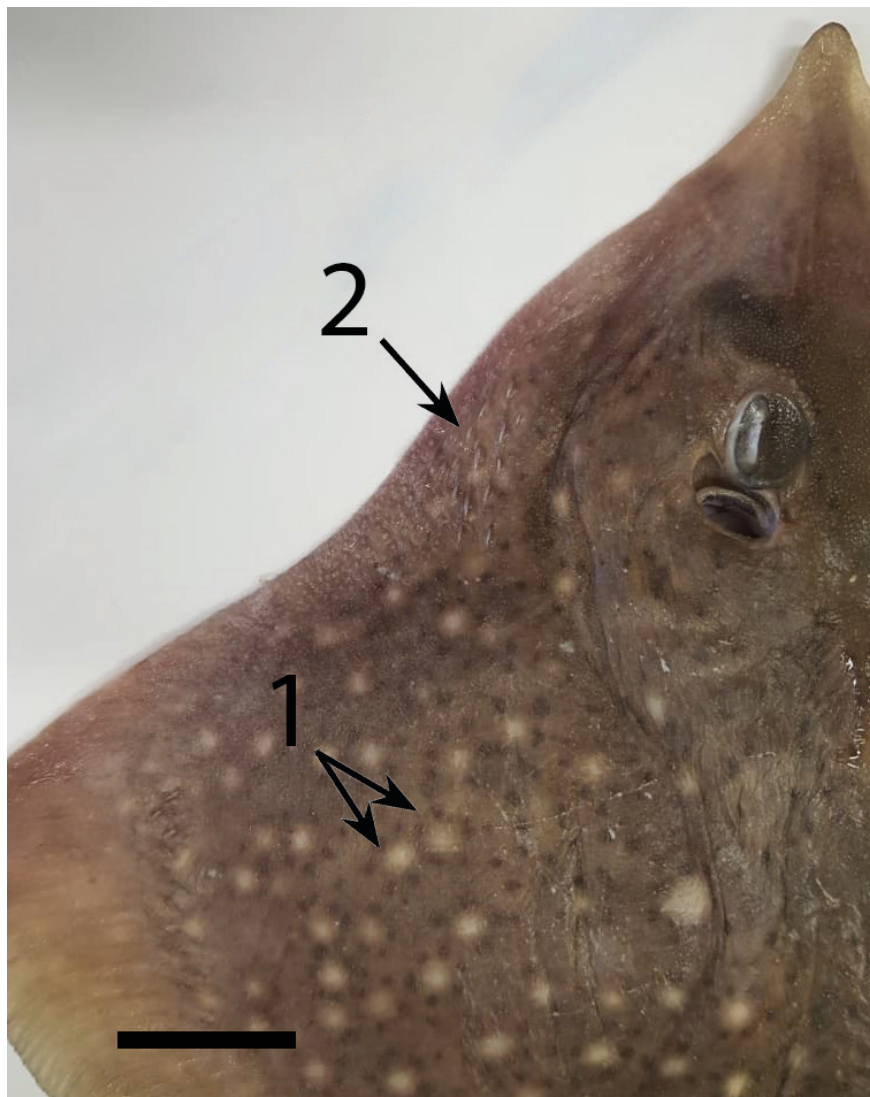


Fig. 3. *Raja asterias*. (Ref. 2034 FL). **(1):** Dark dots, as rosettes and partly surrounding lighter and larger spots. **(2):** Malar thorns arranged in rows, scale bar= 30mm.

noted that size at first sexual maturity occurs at 60 cm DW in specimens from the Tunisian coast;

The morphology, measurements, meristic counts and color are in total agreement with previous description of *Raja asterias* noted by TORTONESE (1956), QUIGNARD (1965), STEHMANN and BÜRKEL (1984), CAPAPÉ and DESOUTTER

(1980), SERENA (2005), EBERT and STEHMANN (2013) and ORDINES *et al.* (2017). The present capture of *R. asterias* constitutes the first record of the species from the Syrian coast and increased the number of rajid species reported to date in the region, where occur 7 rajid species and 46 elasmobranch species (ALI, 2003; 2018; ALKUSAIRY and SAAD, 2018; SAAD and ALKUSAIRY, 2019). In addition, this record also makes the family Rajidae among the most diverse elasmobranch families in the Syrian marine waters. However, a single specimen cannot represent the full morphological range of the species and additional records are needed to confirm the establishment of a viable population. Its local and new occurrence could be due to potential mechanisms such as human mediated transport, this pattern cannot be totally ruled out.

This record may indicate a previously overlooked population, probably confused with other closely related species, mainly *Raja clavata* (KABASAKAL *et al.*, 2025). *R. clavata* has a dorsal surface entirely spinulose in all sizes, with large thorns more abundant in adult specimens, especially in females, but also present in the ventral surface. The dorsal surface can display different types of coloration (MNASRI *et al.*, 2009; CAPAPÉ *et al.*, 2018), in addition the tail exhibits distinct light cross-bars (STEHMANN and BÜRKE, 1984).

On the other hand, the new finding of *R. asterias* from the Syrian coast fills the gap concerning its distribution in the Levant Basin. The specimen was captured at depth about 30m. SERENA (2005) reported *R. asterias* as a benthic species from shallow waters up to 200 m. Immature individuals inhabiting the coastal areas and adults being more abundant at depths greater than 40 m (FERRÀ *et al.*, 2016). *R. asterias* feeds on benthic preys, among them crustaceans are the most ingested mainly by juveniles, however ontogenetic changes appear with size, larger individuals consume teleosts and cephalopods CAPAPÉ and QUIGNARD (1977), ROMANELLI *et al.* (2007) SVIBEN *et al.* (2019). Conversely, the gut of the studied specimen was empty.

Detection of *R. asterias* in Syrian marine waters confirms the need for continued monitoring of elasmobranch diversity in the region. The IUCN Red List assessed *R. asterias* as a near threatened species (SERENA *et al.* 2015). Further studies are recommended to assess the population status, the distribution, and the ecological role of *Raja asterias* in the Levant Basin.

Table 1. Measurements in mm with % of disk width (%DW) and total body weight (TBW) carried out in the specimen of *Raja asterias*. (Ref. 2034 FL). collected from the Syrian marine waters.

Morphometric measurements	mm	DW%
Disc width	334	100.0
Total length	510	160.8
Disc length	247	74.0
Snout tip to max. disc width	158	47.3
Interspiracular width	31	9.3
Pre-orbital length	65	19.5
Eye diameter	16	4.8
Eyeball length	6	1.8
Pectoral fin anterior margin	212	63.5
Pectoral fin posterior margin	138	41.3
Pectoral fin inner margin	38	11.4
Snout pre-nasal length	45	13.5
Mouth width	41	12.3
First gill slit length	7	2.1
Second gill slit length	7	2.1
Third gill slit length	8	2.4
Fourth gill slit length	10	3.0
Fifth gill slit length	7	2.1
Snout to middle of vent	223	66.8
Pelvic fin anterior margin	55	16.5
Pelvic fin posterior margin	71	21.3
Pelvic fin inner margin		0.0
Snout tip to pelvic fin	205	61.4
Tail base width	32	9.6
Pre first dorsal fin	396	118.6
Pre second dorsal fin	432	129.3
Space between two dorsal fins	19	
Base length of first dorsal fin	24	7.2
Base length of second dorsal fin	31	9.3
Clasper length	107	32.0
Total body weight (kg)	551	

Table 2. Meristic counts recorded in the specimen of *Raja asterias*. (Ref. 2034 FL). collected from the Syrian waters compared with the same counts reported from other marine areas.

Authors	Tortonese (1956)	Quignard (1965)	Capapé & Desoutter (1980)	Ordines <i>et al</i> (2017)	This study
Marine area	Italian Seas	Gulf of Lions	Tunisia*	Gulf of Cádiz	Syria coast
Tooth rows	36-44	37-45/36-50	36-48	42-46	38-41
Truncal vertebrae	-	29-30	23	-	29
Pectoral fin rays	-	86-90	71-76	-	72
Pseudo-branchial lamellae	-	16-17 (mean = 17)	11-12	-	11
Nictitating lamellae	-	-	12	-	12

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