

**FIRST RECORD OF WEDGE SOLE, *DICOLOGLOSSA CUNEATA*
(ACTINOPTERYGII: PLEURONECTIFORMES: SOLEIDAE), FROM THE LEVANT BASIN
(EASTERN MEDITERRANEAN)**

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Abstract. This paper reports the first record of a specimen of wedge sole, *Dicologlossa cuneata* (Moreau, 1881), from the Syrian coast, and also from the Levant Basin, constituting its easternmost extension range in the Mediterranean Sea. The specimen was examined, illustrated, measured, and weighed and the collected data are provided herein. This single capture of *D. cuneata*, however, cannot support a statement that a sustainable population of this fish has established itself in this area.

Keywords: description, morphometric measurements, meristic counts, distribution, extension range

Wedge sole, *Dicologlossa cuneata* (Moreau, 1881), has been reported in the eastern Atlantic from the Bay of Biscay (Lagardère 1980), the coast of Portugal (López et al. 2012) to south-western Spain (Jiménez et al. 1998, García-Isarch et al. 2006). South the Strait of Gibraltar, *D. cuneata* is known from Morocco (Belghyti et al. 1994, Lloris and Rucabado 1998), Mauritania (Maurin and Quéro 1981), Senegal (Cadenat 1951) to the Gulf of Guinea (Blache et al. 1970), and southward off the South Africa coast (Smith and Heemstra 1986).

Dicologlossa cuneata occurs in the Mediterranean Sea (Quéro et al. 1986) and the species was previously a main target species off the Spanish coast (Jiménez et al. 1998, García-Isarch et al. 2006), and due to a high fishing pressure, it is considered at present a threatened species in the area (Munroe and Nielsen 2010). Quéro et al. (1986) did not report the occurrence of *D. cuneata* from the Mediterranean coast of France and the Italian marine waters. *Dicologlossa cuneata* is reported off the Maghreb shore, from Morocco (Lloris and Rucabado 1998) and Algeria where it appears to be commonly caught (Rousset and Marinaro 1983, Boufersaoui and Bedda 2011); conversely, the species is not recorded off the Tunisian coast (Bradai et al. 2004). *Dicologlossa cuneata* is known off Greece (Papaconstatinou 2014) and

Turkey (Bilecenoglu et al. 2014), displaying the extension range of the species in the eastern Mediterranean, although it was not recorded in the Levant Basin (Mouneimne 1977, Golani 2005, Saad 2005).

On 12 May 2014, a specimen of *Dicologlossa cuneata* was caught by bottom longline on sandy bottom at a depth of approximately 35 m, 3 km off Jableh city (35°34'E, 35°20'N) (Fig. 1). The specimen was measured to the nearest 1 mm and weighed to the nearest 1 dg. Biometric examination of the fish was based on the methodology of Quéro et al. (1986, 2003) and Louisy (2002). The weight, the morphometric measurements, and the meristic counts were summarized in Table 1. The morphometric measurements were provided as absolute values [mm] as well as relative values expressed as percent of the total length (TL) and standard length (SL). The specimen was preserved in 10% buffered formalin and deposited in the Ichthyological Collection of the Marine Sciences Laboratory, Agriculture Faculty at Tishreen University, Syria, under the catalogue number: 2270 MSL (Fig. 2A, B).

Family SOLEIDAE

Genus *Dicologlossa* Chabanaud, 1927

Dicologlossa cuneata (Moreau, 1881)

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Diagnosis. Body oval and strongly compressed, broad anteriorly and tapering posteriorly, with snout prominent and rounded, ctenoid scales on eyed side, and cycloid scales on blind side; scales on head and nape of eyed side larger than those on body; eyes on right side, with scaly interorbital space, mouth curved, cleft reaching posteriorly only to vertical through middle of upper eye, supra-temporal branch of lateral line forming angular S-shape (Fig. 3), anterior nostril on blind side not enlarged, anterior nostril on eyed side with backward pointing tube, dorsal fin beginning at vertical through front margin of upper eye, dorsal and anal fins joined to caudal fin; pectoral fins symmetrical in size; pelvic fins short and bases asymmetrical in position; colour grey or brown on eyed side of body greyish, blind side whitish, dark blotch on pectoral fin from eyed side.

Remarks. Morphology, colour, morphometric measurements, and counts observed in this specimen are in total accordance with Quéro et al. (1986, 2003) and Louisy (2002) and confirm the occurrence of *Dicologlossa cuneata* in the Syrian waters, increasing the number of bony fishes already recorded in the area (Saad 2005, Ali et al. 2013, 2014, Soliman et al. 2014). The addition of *D. cuneata* to the Syrian ichthyofauna makes it the second representative of its genus in the Mediterranean. The other one is ocellated wedge sole, *Dicologlossa hexophthalma* (Bennett, 1831) recorded to date off the Mediterranean Spanish coast (Quéro et al. 1986). It is therefore necessary to provide a key to distinguish between *D. cuneata* and *D. hexophthalma*, based on morphology, colour, and meristic counts.

Taxonomic key. (The values recorded in the Syrian specimen of *D. cuneata* are given in square brackets.)

Body oval, tapering backward, dorsal fin with 77–90 [82] fin rays, pectoral fin on eyed side with 8–10 [8] fin rays, on blind side a little shorter with 7–10 [7] fin rays,

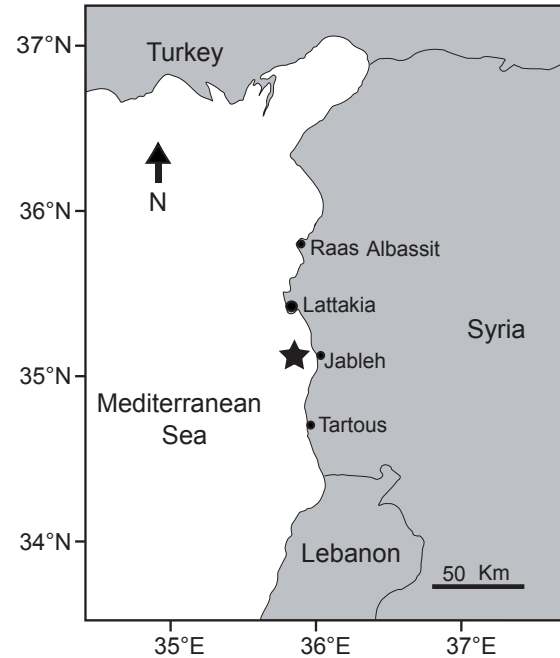


Fig. 1. Map of the Mediterranean showing Syria and map of the coast of Syria pointing out the capture site of *Dicologlossa cuneata* (black star)

Table 1
Absolute and relative biometric data of the specimen of *Dicologlossa cuneata* from the Syrian coast

Character	Value				
	Count	[mm]	[%TL]	[%SL]	[g]
Total length (TL)		232	100.0	120.2	
Standard length (SL)		193	84.1	100.0	
Body depth		68	29.3	35.2	
Interorbital space		3	1.3	1.5	
Pre-pelvic length		23	9.9	11.8	
Pre-anal length		36	15.5	18.5	
Dorsal fin length		198	85.3	101.5	
Dorsal fin base		195	84.1	100.0	
Dorsal fin height		12	5.2	6.2	
Anal fin length		168	72.4	86.2	
Anal fin base		165	71.1	84.6	
Anal fin height		9	3.9	4.6	
Dorsal fin soft rays	82				
Pelvic fin soft rays E/B	7/7				
Anal fin soft rays	67				
Pectoral fin soft rays E/B	8/7				
Caudal fin soft rays	16				
Lateral line scales E/B	125/130				
Supratemporal lateral line scales E/B	23/0				
Weight					120.6

Measurements are expressed in millimetres or as percentage of total length or standard length; E/B = value for eyed/blind side.

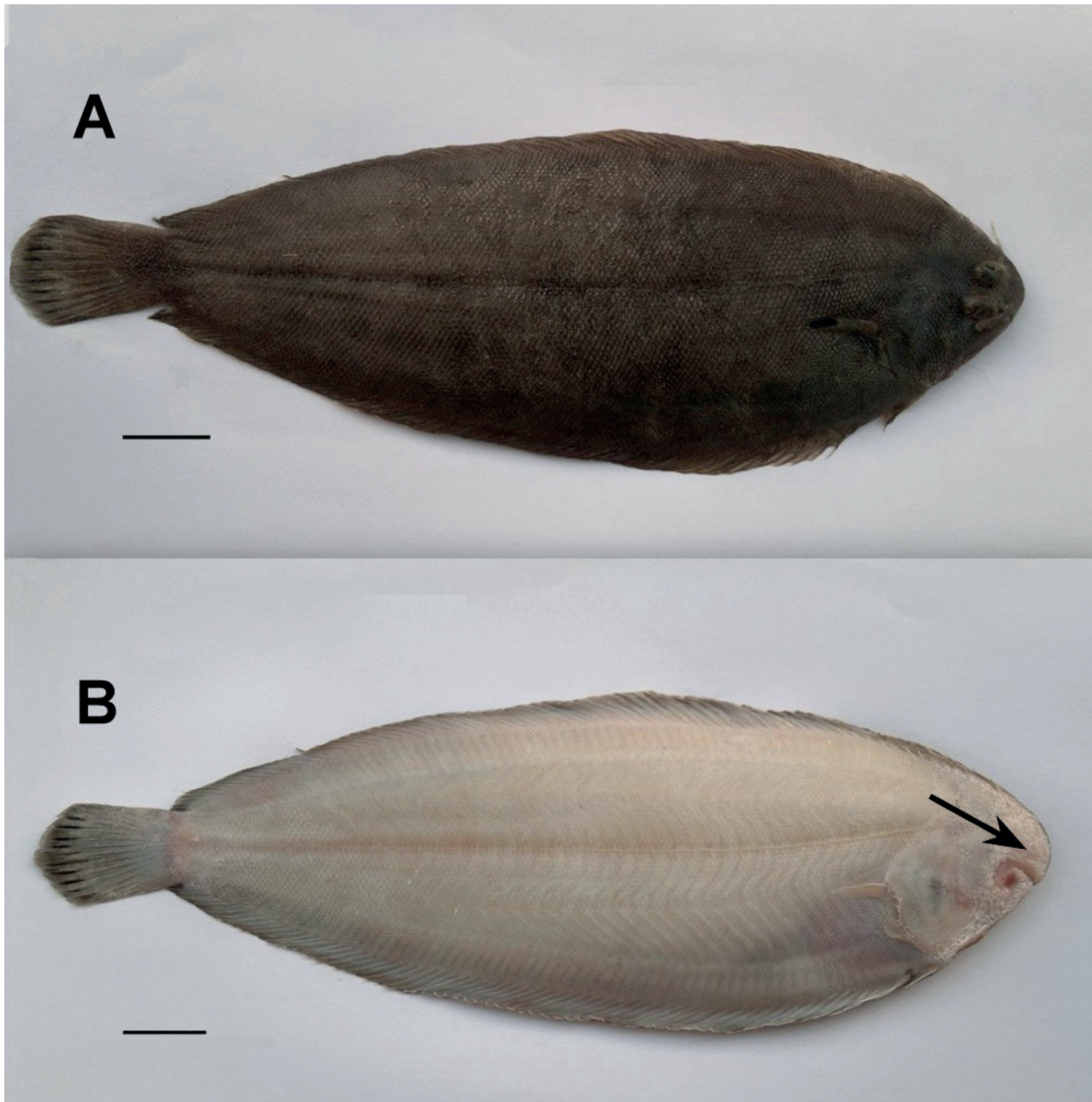


Fig. 2. *Dicologlossa cuneata* captured off the Syrian coast; Eyed side (A), scale bar = 20 mm; Blind side (B) with arrow showing anterior nostril, scale bar = 20 mm

anal fin with 62–78 [67] fin rays, caudal fin united to dorsal by a little developed membrane, lateral line with 114–126 [125] scales; colour of eyed side grey or brown to chocolate, pectoral fin on eyed side with an oblong black blotch in the middle.....*Dicologlossa cuneata*

Body strongly oval, dorsal fin with 61–71 fin rays, pectoral fin on eyed side with 8–10 fin rays, on blind side a little shorter with 3–7 fin rays, anal fin with 52–56 fin rays, caudal fin separated from dorsal lateral line with 90–92 fin rays; colour of eyed side reddish-brown, with dark bands and 6 dark ocelli, along dorsal and anal fins.....*Dicologlossa hexophthalma*

The presently reported capture of *Dicologlossa cuneata* constitutes the first record of the species in the Levant Basin and the Syrian coast, consequently it should

be considered to date as the easternmost extension range of the species in the Mediterranean Sea. However, this single record does not constitute a sufficient support to suggest that a sustainable population is a present established off Syria, such as in other Mediterranean areas, southern Spain (Jiménez et al. 1998, García-Isarch et al. 2006), and the Algerian coast (Boufersaoui and Bedda 2011), being the best examples of stable populations. Although *D. cuneata* was not reported by Golani et al. (2002) as a ‘Herculean alien species’ (*sensu* Quignard and Tomasini 2000), a migration from the eastern Atlantic through the Strait of Gibraltar remains the most suitable hypothesis which cannot be totally ruled out.

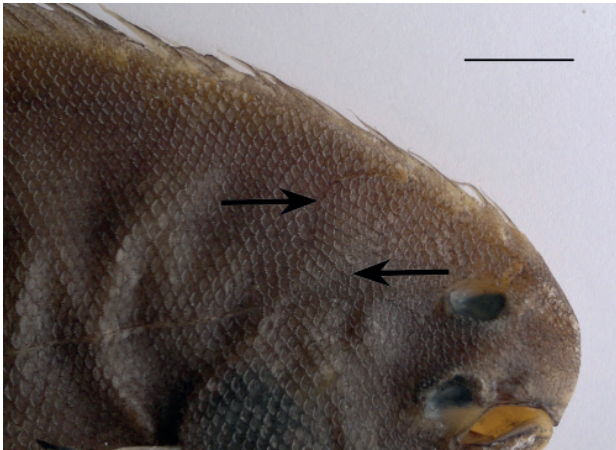


Fig. 3. Head of *Dicologlossa cuneata*; Eyed side with arrows showing supra-temporal branch of lateral line forming an angular S-shape; scale bar = 10 mm

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