

**FIRST CONFIRMED RECORD OF THE BLUE TANG, *ACANTHURUS COERULEUS*  
(ACTINOPTERYGII: PERCIFORMES: ACANTHURIDAE) IN THE MEDITERRANEAN**

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**Abstract.** A single specimen of a sub-adult specimen of the Atlantic species, *Acanthurus coeruleus* Bloch et Schneider, 1801, was collected in the Mediterranean coast of Israel. This collection was the first confirmed record of this species in the Mediterranean since hitherto it was known from this region only by a single underwater photograph from Cyprus. We postulate that this species may be considered as having established a population in this region.

**Keywords:** fish, exotic, Israel, fish, population establishment

On 20 November 2014 a sub-adult specimen of a blue tang, *Acanthurus coeruleus* Bloch et Schneider, 1801, of 120 mm SL (161 mm TL), weighing 98.0 g (Fig. 1), was speared at a depth of 11 m over rocky habitat in the vicinity of Haifa Bay, Israel. This collection was the first confirmed record of this species in the Mediterranean. Hitherto it was known from this region only by an underwater photograph from Cyprus (Langeneck et al. 2012). The specimen was deposited in the Fish Collection of the National Natural Collections of the Hebrew University of Jerusalem and received the catalogue number HUJ 20363.

ACANTHURIDAE

*Acanthurus coeruleus* Bloch et Schneider, 1801

**Description of the Mediterranean specimen.** Very deep body (1.47 times in SL) and very compressed. Small head (3.60 times in SL); Eye located high on head (3.47), inter-orbital distance greater than eye diameter (2.80) and large snout (1.16) (all times in head length). Small mouth, not reaching back past anterior vertical of eye. Pronounced lips. Series of close-set teeth, each with 3–5 denticulate edges. Sharp horizontal lancet-like spine on side of caudal peduncle, its length 4.44 times in head length. Small ctenoid scales covering entire body, extending to head reaching mouth. Scales are present also on lower part of dorsal and anal fins membrane. Continuous dorsal fin with nine spines and 25 rays. Anal fin with three spines and 23

rays (Last dorsal and anal fins rays which are divided almost to the base were counted as a single ray). Caudal fin emarginated. Pectoral fin located just behind operculum with 16 rays, upper ray much longer than lower ray. Pelvic fin with single spine and five rays, first ray being longest. Flank and belly yellowish-brown with numerous beige longitudinal lines. Back brown to dark grey. Fins yellow with thin bluish-grey margin of dorsal and anal fins. Eye surrounded by yellow ring.

Measurements, counts and colour pattern agree with Böhlke and Chaplin (1968) and Randall (1968, 2002), regarding the sub-adult of *Acanthurus coeruleus*.

**Remarks.** The juveniles of *Acanthurus coeruleus* are bright yellow as shown by Langeneck et al. (2012) from Cyprus. The adults are bluish-grey to purple. The age and size of the colour change is quite variable (Benjamin Victor, personal communication).

*Acanthurus coeruleus* inhabits shallow waters near coral or rocky habitats. It feeds on algae and sea grass. Its original distribution is the Western Atlantic Ocean from New York to Florida in the US to Bermuda, the Gulf of Mexico and Brazil. This species is also reported from Ascension Island in the mid-Atlantic Ocean. (Randall 2002)

*Acanthurus coeruleus* is the second Atlantic surgeonfish to be found in the Mediterranean. It was preceded by *Acanthurus monroviae* Steindachner, 1876, reported

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**Fig. 1.** Blue tang, *Acanthurus coeruleus*, 120 mm SL, Haifa, 20 November 2014, HUI 20363; Photograph: D. Golani

from Israel (Golani and Sonin 1996) and from Algeria (Hemida et al. 2004).

*Acanthurus coeruleus* was reported for the first time in the Mediterranean based on an underwater photograph and observation from Cyprus. Therefore, the presently reported record constitutes the first confirmed record that can be studied and can substantiate the occurrence of this species in the Mediterranean. Langeneck et al. (2012) raised three possible ways for introduction of this species into the Mediterranean, namely, via ballast waters, aquarium escapee, and “natural” introduction via the Straits of Gibraltar with no relation to human activity. Although *A. coeruleus* is found in the aquarium trade, the occurrence of specimens in the Mediterranean in such long distances of ca. 400 km from each other suggests that the introduction of this species is another case of tropical Atlantic fish species such as *Carlarius parkii* (Günther, 1864) [originally reported as *Arius parkii* (see Marceniuk and Menezes, 2007)], *Enchelycore anatina* (Lowe, 1838), *Cephalopholis taeniops* (Valenciennes in Cuvier and Valenciennes, 1828), *Pagellus bellottii* Steindachner, 1882, *Acanthurus monroviae* Steindachner, 1876, and *Solea senegalensis* Kaup, 1858 (see Golani and Sonin 1996, Golani et al. 2013, Fricke et al. 2014). All these Atlantic species (except *C. parkii*.) were recorded in the eastern Mediterranean by more than one specimen and therefore can be considered as having established a population in this region. This phenomenon can be explained as thermophilic tropical species that found a suitable temperature regime in the Levant, as opposed to the colder regime in the western and central Mediterranean where establishing a population is more difficult.

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