

Short Communication

First record of the Indo-Pacific *Champsodon nudivittis* (Ogilby, 1895) (Perciformes, Champsodontidae) in the Aegean waters (eastern Mediterranean Sea)

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Abstract

On 12 May 2012, two individuals of *Champsodon nudivittis* were captured off the coasts of Rhodes Island, southeastern Aegean Sea, at 150 m depth. This finding suggests a rapid geographical extension of this Indo-Pacific species along the northeastern Levantine coast of the Mediterranean. With *C. nudivittis*, the number of Lessepsian fishes recorded in the Aegean Sea is raised to 31.

Key words: *Champsodon nudivittis*, non-indigenous species, Aegean Sea, Mediterranean Sea, Lessepsian migration

Introduction

Up to date, the family of Champsodontidae, commonly known as gapers, is represented in the Mediterranean Sea by two species of Indo-Pacific origin, namely, *Champsodon nudivittis* (Ogilby, 1895) and *Champsodon vorax* Günther, 1867. *C. nudivittis* was recorded firstly from Iskenderun Bay, Turkey, in 2008, at 50 m depth (Çiçek and Bilecenoglu 2009) and then off Ashdod, Israel in 2011 at 100 m (Goren et al. 2011). In contrast, *C. vorax* was recorded firstly off the coasts of Lebanon in 2010, at 30-150 m (Bariche 2010, 2011). Here, the first record of *C. nudivittis* from Aegean waters is presented and discussed.

Material and methods

On 12 May 2012, two individuals of *Champsodon nudivittis* (a and b) were captured with a local shrimp pot at a depth of 150 m, offshore the Kamiros area - on the western coast of Rhodes Island (36°23'50,35"N, 27°52'35,86"S; Figure 1). Individuals were identified following Nemeth (1994, 2001).

Length measurements were obtained with digital calipers to the nearest 0.1 mm and meristic counts of spines and gill rakers by the use of a stereomicroscope. For descriptions of scale patterns the term "chin" refers to the ventral region between the dentaries and the term "breast" refers to the triangular area just anterior to the pelvic fin base (Nemeth 1994). Radiography was performed to reveal the number of vertebrae and to distinguish whether the spine of the first haemal arch was located between the third and fourth anal pterygiophore, as this character is important for the identification of this species.

Both individuals were deposited in the collection of the Hydrobiological Station of Rhodes, with catalogue numbers HSR97 and HSR98.

Results

Meristic formula: D1, V; D2, 20; A, 18; P, 12-14; V, 6.

Colour of thawed individuals: silvery with dark spots on sides, upper part darker, abdomen shiny silver. Chin spotted with small melanophores; pectoral, ventral and anal fins

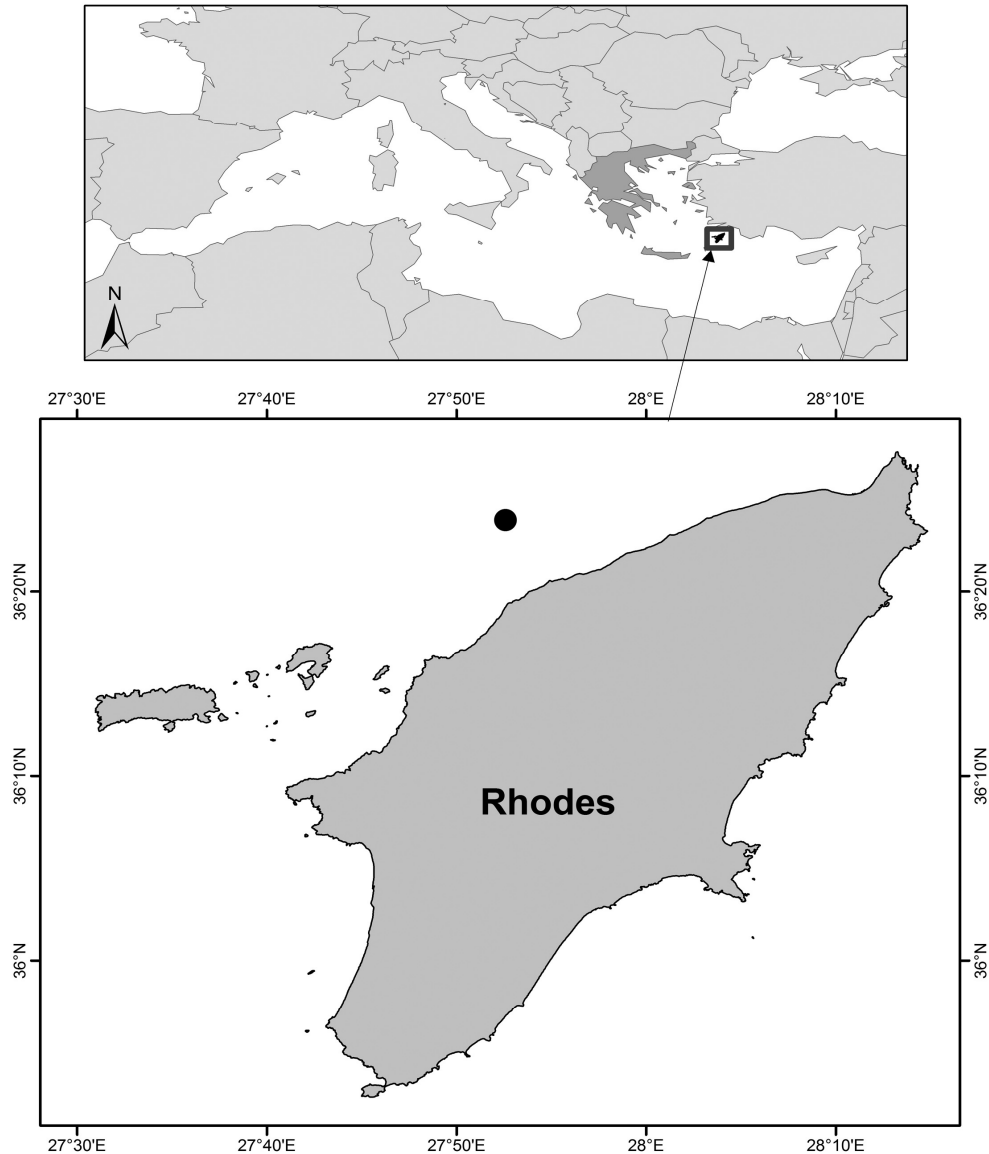


Figure 1. Map of Rhodes island and sampling location.

pale; dorsal fins pale with dark spots in their upper parts; central rays of caudal fin pale, upper and lower lobes with sparse dark spots, dark pigmentation at base of the caudal fin (Figure 2). First arch of the upper limb with one gill raker; 11 and 10 gill rakers on the lower limb of specimen (a) and (b), respectively. Chin naked, sensory papillae between eyes not arranged in a semicircle, ventral margin of pupil indented by flap of iris (Figure 3). The breast was naked with

a central patch of scales (<10) in specimen (a), while specimen (b) possessed >50 scales. Radiography revealed 31 vertebrae for individual (a) and 30 vertebrae for individual (b); the spine of the first haemal arch, located between the third and fourth anal pterygiophore (Figure 4). Premaxilla notched lateral to symphysis and symphysis not extending farther anteriorly than curve of premaxillae. Morphometric measurements and ratios were given in Table I.



Figure 2. *Champsodon nudivittis*; individual (a); SL = 69.0 mm.



Figure 3. *Champsodon nudivittis*; individual (b); SL = 75.4 mm. Abdomen scale pattern and patch of scales at the centre of the naked breast is visible.

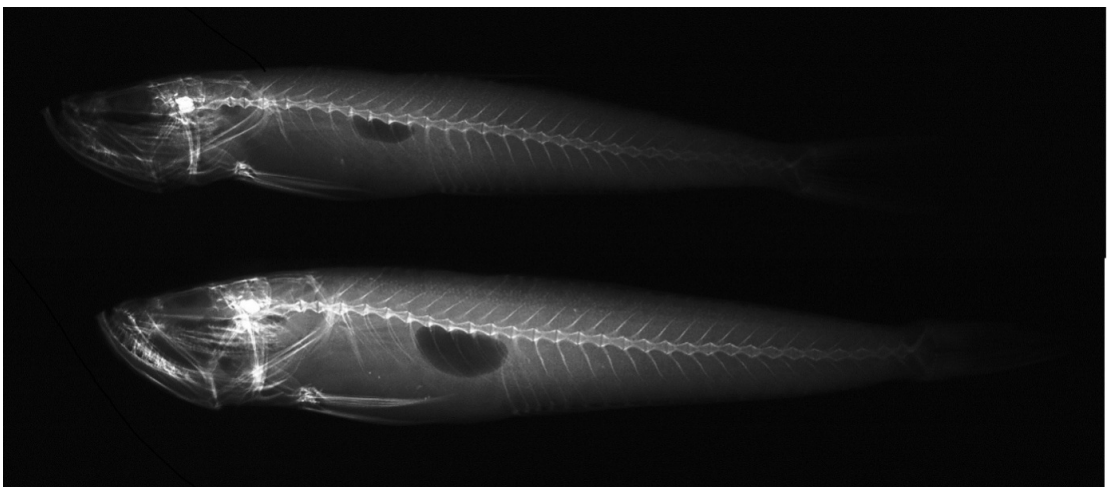


Figure 4. Radiograph of the two *Champsodon nudivittis* individuals a (upper; SL = 69 mm) and b (lower; SL = 75.4 mm).

Table 1. Morphometric characteristics (mm) and ratios of *Champsodon nudivittis* individuals (a, b) in Rhodes island, SE Aegean Sea.

Morphometrics	a	b	Ratios	a	b
Total length (TL)	83.1	88.3	SL / HL	3.48	3.46
Fork length (FL)	76.2	84.5	SL / BDoa	6.05	5.98
Standard length (SL)	69.0	75.4	SL / BDop	6.33	6.34
Caudal peduncle depth (CPD)	4.4	5.0	SL / CPD	15.68	15.08
Head length (HL)	19.8	21.8	SL / PDL	3.25	3.28
Body depth over anal fin origin (Bdoa)	11.4	12.6	SL / PAL	1.86	2.03
Body depth over pelvic fin origin (Bdop)	10.9	11.9	SL / PFL	4.60	4.71
Pre-dorsal length (PDL)	21.2	23.0	HL / ED	4.95	5.07
Pre-anal length (PAL)	37.0	37.1	HL / SL	3.81	3.76
Pelvic fin length (PFL)	15.0	16.0	ED / SD	0.77	0.74
Eye Diameter (ED)	4.0	4.3	HL / PFL	1.32	1.36
Snout length (SL)	5.2	5.8	HL / POSL	6.00	5.74
Pre-opercular spine length (POSL)	3.3	3.8	ED / IOD	1.29	1.23
Inter-orbital distance (IOD)	3.1	3.5	PDL / SPSOD	2.06	2.05
Spinous to soft dorsal origins distance (SPSOD)	10.3	11.2	LEMD / ED	0.58	0.67
Least eye and maxilla distance (LEMD)	2.3	2.9	HL / ML	2.44	2.40
Maxilla length (ML)	8.1	9.1	PAL / SL	0.54	0.49

Discussion

Champsodon nudivittis is distributed in the Indo-West Pacific Ocean, including records from Australia, Indonesia, Madagascar, Papua New Guinea and Philippines (Nemeth 1994; Çiçek and Bilecenoglu and references therein). The occurrence of *C. nudivittis* in the Red Sea, recently confirmed by Goren et al. (2011), suggests that the mode of introduction into the Mediterranean Sea occurred via immigration through the Suez Canal, commonly called Lessepsian migration (Por 1978). Its successful establishment in the eastern Mediterranean Sea was confirmed through records in Iskenderun Bay, Turkey (Çiçek and Bilecenoglu 2009) and Israel (Goren et al. 2011) and the present finding, from the southeastern Aegean waters, documents its rapid geographical expansion. In Rhodes, the most of Lessepsian fishes occur between 0 and 40 m of depth (Kalogirou et al. 2010, 2012) and *C. nudivittis* is the only non-indigenous fish to have been recorded below 50 m, together with the tetraodontid *Tylerius spinosissimus* (Regan, 1908) (Corsini-Foka et al. 2010). Considering the weak monitoring efforts of these grounds, the exact time of arrival and establishment of *C. nudivittis* cannot be dated with certainty. The spread of non-indigenous warm water species in the Mediterranean Sea is an ongoing and accelerating process and evidence reveals that in the area of Rhodes the intensification of this phenomenon is correlated to the increase in sea water temperatures (Raitsoy et al. 2010; Pancucci-Papadopoulou et al. 2012).

The present record increases the number of Lessepsian fishes recorded in Aegean waters to 31 (Corsini-Foka 2010; Çinar et al. 2011; Zenetos et al. 2011). The study of the diversity and structure of these non-indigenous assemblages in the Aegean Sea deserves more effort, as well as the investigation of their impacts on indigenous communities.

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