

The Northernmost Record of *Champsodon nudivittis* (Ogilby, 1895) in the Mediterranean Sea

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ABSTRACT

Champsodon nudivittis (Ogilby, 1895), also known as nakedband gaper, is distributed in the Aegean and Levantine parts of the Mediterranean Sea. It has been reported in the Mediterranean Sea as a Red Sea immigrant. The first record of the species in the Mediterranean Sea was reported in 2009 from the Levantine coasts. In this study, two individuals of nakedband gaper were captured about two months apart north of Gokceada Island, in the North Aegean Sea. The specimens were obtained using a trawl at depths of 100-120 m. Their total lengths were measured as 117 and 122 mm. This report extends the distribution of *C. nudivittis* to the North Aegean Sea, marking its northernmost record in the Mediterranean Sea to date. Moreover, the species is the second Red Sea origin fish recorded in the area between Gokceada Island, Samothraki Island and Saros Bay. *C. nudivittis* is known as a predator, hence, its population density should be monitored and its impact on the ecosystem should be assessed in the North Aegean Sea.

Keywords: Champsodontidae, new record, Nakedband Gaper, North Aegean Sea, Turkey

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INTRODUCTION

According to Nemeth (1994), the family Champsodontidae has one genus and thirteen species around the world. These fishes are known by their large mouths, laterally compressed bodies and small denticulate scales. They are originated from the Indo-Pacific oceans and their populations are concentrated around the tropical zone. Among them, *Champsodon nudivittis* (Ogilby 1895), *C. vorax* Günther, 1867 and *C. capensis* Regan, 1908 were reported in the Mediterranean Sea as Red Sea immigrants (Bariche, 2010; Çiçek & Bilecenoğlu, 2009; Dalyan et al., 2012). Finally, Stern et al. (2020) asserted that all of the recorded individuals belonged to *C. nudivittis* in the light of morphological and genetic data in the Mediterranean Sea. The Aegean and Levantine Seas represent the expanded range of the species in the Mediterranean Sea (Figure 1). All Mediterranean records of the nakedband gaper are listed in (Table 1).

Champsodon nudivittis is native to the Indo-West Pacific, and found in Madagascar, Indonesia, the Philippines, Australia and the Red Sea (Froese & Pauly, 2020; Goren et al., 2012). It is a bathypelagic species and found at depths between 0 – 716 m (Dalyan et al., 2012; Froese & Pauly, 2020). It is known as the deepest invasive fish that was recorded at a depth of 716 m, in the Mediterranean Sea (Dalyan et al., 2012).

Previously, the species has reached up to the Central Aegean Sea (Kebapçioğlu & Dereli, 2016). And, the present report is related the first record of *C. nudivittis* in the North Aegean Sea. Besides *Lagocephalus sceleratus* (Gmelin, 1789), which has also been recorded in this area (Katsanevakis et al., 2014), this report provides the second record of Red Sea immigrant fish species in the area between Gokceada Island, Samothraki Island and Saros Bay, which is a special zone due to its high biodiversity.

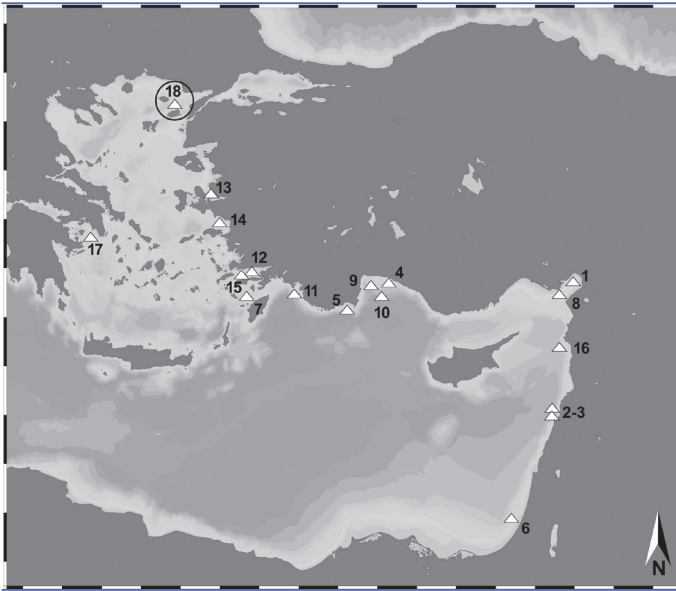


Figure 1. Distribution map of *C. nudivittis* in the Mediterranean Sea.

MATERIALS AND METHODS

On 12 November, 2019 and 5 January, 2020, two specimens of *C. nudivittis* were captured by trawl north of Gökçeada Island, Turkey, in the North Aegean Sea at depths of 100-120 m (on a sandy-muddy bottom). The first individual was found at coordinates between 40°14'10"N;25°49'54"E and 40°13'58"N;25°48'06"E. The coordinate of the second specimen could not be recorded. The specimens were caught by the commercial vessel UĞUR REİS-3 (17 m, 500 HP). Morphological features were measured on the individuals using a digital caliper (nearest 0.01 mm).

The specimens were identified as *C. nudivittis* following Nemeth (1994) and Stern et al. (2020). The individuals were preserved in 50% ethanol solution and stored in the Istanbul University Science Faculty, Hydrobiology Museum (IUSHM 2019-1414, IUSHM 2020-1419).

RESULTS AND DISCUSSION

The captured specimens of the nakedband gaper, *C. nudivittis*, were 122 and 117 mm total length and they weighed 10 and 9 g respectively (Table 2). The specimens had the following features: Head length was 3.6-3.7 times and body width was 6.5-6.8 times the standard length, SL. Snout length was 3.6-4.0 times and eye diameter was 4.8-4.6 times the head length, HL. The body was well compressed. The maxilla extended beyond the eye, the chin was without scales and covered with melanophore spots. The breast was scaled.

All metric and meristic data, forming of the specialized scales, and color of the captured individuals were consistent with Nemeth (1994) and Stern et al. (2020) and indicated the identification to be *C. nudivittis* (Figure 2). It is distinguished from its congeners by having no scales on its chin while it has a restricted or wide scaled area on the pectoral. Also, its belly is scaled on the anterior of the vent.

Table 1. Records of *C. nudivittis* in the Mediterranean Sea.

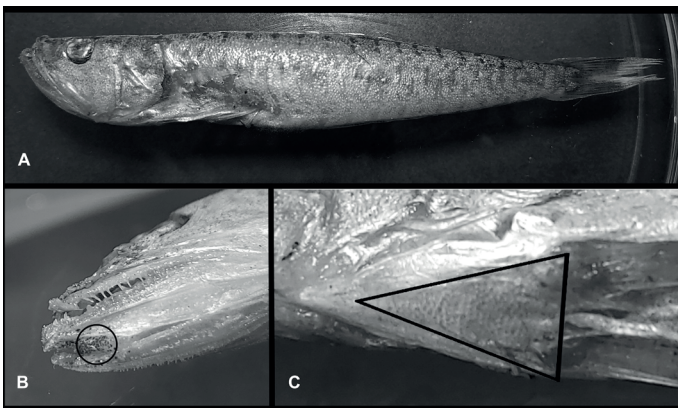
Year	Locality	References
1	Iskenderun Bay (Turkey) / Levantine Sea	Çiçek & Bilecenoğlu, 2009
2	Coast of Baotrun (Lübnan) / Levantine Sea	Bariche, 2010
3	Coast of Baotrun (Lübnan) / Levantine Sea	Bariche, 2011
4	Gulf of Antalya (Turkey) / Levantine Sea	Gökoğlu et al., 2011
5	Finike Bay (Turkey) / Levantine Sea	Erguden & Turan, 2011
6	off Ashdod (Israel) / Levantine Sea	Goren et al., 2011
7	North of Rodos (Greece) / Aegean Sea	Kalogirou and Corsini-Foka, 2012
8	Iskenderun Bay (Turkey) / Levantine Sea	Dalyan et al., 2012
9	Gulf of Antalya (Turkey) / Levantine Sea	Gökoğlu & Özvarol, 2013
10	Gulf of Antalya (Turkey) / Levantine Sea	Gökoğlu & Özvarol, 2013
11	Ekincik and Fethiye Bay (Turkey) / Aegean Sea	Filiz et al., 2014
12	Gokova Bay (Turkey) / Aegean Sea	Akyol & Ünal, 2015
13	Izmir Bay (Turkey) / Aegean Sea	Aydın & Akyol, 2015
14	Kusadasi Bay (Turkey) / Aegean Sea	Kebapcioglu & Dereli, 2016
15	Gokova Bay (Turkey) / Aegean Sea	Yapıcı et al., 2016
16	off Jableh (Syria) / Levantine Sea	Ali et al., 2017
17	Saronikos Gulf (Greece) / Aegean Sea	Kousteni & Christidis, 2019
18	North of Gokceada Island (Turkey) / Aegean Sea	Present study

In the last decade, *C. nudivittis* have appeared to be the main subject of many articles with their high invasive characteristic in the Eastern Mediterranean Sea, and the common view is that the species entered the Mediterranean through the Suez Canal (Bariche, 2010; Çiçek & Bilecenoğlu, 2009; Dalyan et al., 2012). Moreover, *C. nudivittis* were reported in the Red Sea (Goren et al., 2014).

It is not surprising that the species that reach the maximum age early and have an r-selected life history, have opportunistic characters and will be invasive in their newly arrived areas. The maximum age of *C. nudivittis* is determined as two (Yağlıoğlu et al., 2014) and four (Demirci et al., 2016) in the Mediterranean. This can be considered as an advantage that strengthens the invasive character of the fish.

Table 2. Morphometric and meristic features of *C. nudivittis* in the north of Gokceada Island.

Measurement	Spc. 1	Spc. 2
Total length (mm)	122	117
Standard length (mm)	104	101
Body depth (mm)	16	14.9
Body width (mm)	11	10.5
Head length (mm)	29	27.4
Snout length (mm)	8	6.9
Eye diameter (mm)	6	5.9
Standard length/Head length	3.6	3.7
Standard length/Body depth	6.5	6.8
Head length/Snout length	3.6	4.0
Head length/Eye diameter	4.8	4.6
D1	V	V
D2	19(1)	19
A	17(1)	18
P	13	13

**Figure 2.** The whole body (A), chin (B) and breast (C) of the sampled specimen of *C. nudivittis* from the northwest of Gökçeada Island, Turkey.

CONCLUSION

This study provides the northernmost record of *C. nudivittis* in the Mediterranean Sea and is also the second documented Red Sea immigrant fish species to have been found in the area between Gokceada Island, Samothraki Island and Saros Bay. The population density of the fish should be monitored in the North Aegean Sea due to its high trophic level; hence its impact on the ecosystem should be assessed.

Conflict of interests: The authors have no conflicts of interest to declare.

Ethics committee approval: This study was conducted in accordance with ethics committee procedures of animal experiments.

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Disclosure: -

REFERENCES

- Akyol, O. & Ünal, V. (2015). Occurrence of the Indo-Pacific *Champsodon nudivittis* (Perciformes, Champsodontidae) in the Bay of Gökova (Southern Aegean Sea, Turkey). *Turkish Journal of Fisheries and Aquatic Sciences*, 15(1), 187–190. [CrossRef]
- Ali, M., Saad, A., Jabour, R., Rafrafi-Nouira, S. & Capapé, C. (2017). First record of nakedband gaper *Champsodon nudivittis* (Osteichthyes: Champsodontidae) off the Syrian Coast (Eastern Mediterranean). *Journal of Ichthyology*, 57, 161–163. [CrossRef]
- Aydın, İ. & Akyol, O. (2015). First Record of an Indo-Pacific Gaper, *Champsodon vorax* (Actinopterygii: Perciformes: Champsodontidae), from the Aegean Sea, Turkey. *Acta Ichthyologica Et Piscatoria*, 45(2), 207–209. [CrossRef]
- Bariche, M. (2010). *Champsodon vorax* (Teleostei: Champsodontidae), a new alien fish in the Mediterranean. *Aqua International Journal of Ichthyology*, 16(4), 197–200.
- Bariche, M. (2011). First record of the cube boxfish *Ostracion cubicus* (Ostraciidae) and additional records of *Champsodon vorax* (Champsodontidae), from the Mediterranean. *Aqua, International Journal of Ichthyology*, 17(4), 181–184.
- Çiçek, E. & Bilecenoğlu, M. (2009). A new alien fish in the Mediterranean Sea: *Champsodon nudivittis* (Actinopterygii: Perciformes: Champsodontidae). *Acta Ichthyologica et Piscatoria*, 39(1), 67–69. [CrossRef]
- Dalyan, C., Yemişken, E. & Eryılmaz, L. (2012). A new record of gaper (*Champsodon capensis* Regan, 1908) in the Mediterranean Sea. *Journal of Applied Ichthyology*, 28(5), 834–835. [CrossRef]
- Ergüden, D. & Turan, C. (2011). Occurrence of the nakedband gaper, *Champsodon nudivittis* (Ogilby, 1895) (Osteichthyes: Champsodontidae), in Finike Bay, eastern Mediterranean, Turkey. *Journal of Applied Ichthyology*, 27(6), 1397–1398. [CrossRef]
- Filiz, H., Akçimar, S.C. & Irmak, E. (2014). Occurrence, length-weight and length-length relationships of *Champsodon nudivittis* (Ogilby, 1895) in the Aegean Sea. *Journal of Applied Ichthyology*, 30(2), 415–417. [CrossRef]
- Froese, R. & Pauly, D. (2020). *FishBase, World Wide Web electronic publication*, Available from: <http://www.fishbase.org>, (03/2020).
- Gökoğlu, M., Ünlüsayın, M., Balci, B. A., Özvarol, Y. & Çolak, H. (2011). Two alien fish in the Gulf of Antalya: *Apogon queketti* Gilchrist, 1903 (Apogonidae) and *Champsodon nudivittis* (Ogilby, 1895) (Champsodontidae). *Zoology in the Middle East*, 54(1), 138–140. [CrossRef]
- Gökoğlu, M. & Özvarol, Y. (2013). Additional Records of *Champsodon vorax* and *Champsodon capensis* (Actinopterygii: Perciformes: Champsodontidae) From The Eastern Mediterranean Sea. *Acta Ichthyologica Et Piscatoria*, 43(1), 79–82. [CrossRef]
- Gören, M., Stern, N., Galil, B. S. & Diamant, A. (2011). On the occurrence of the Indo-Pacific *Champsodon nudivittis* (Ogilby, 1895) (Perciformes, Champsodontidae) from the Mediterranean coast of Israel, and the presence of the species in the Red Sea. *Aquatic Invasions* 6, 115–117. [CrossRef]
- Gören, M., Ganga, U. & Jinesh, T. P. (2014). *Champsodon vorax* and *Champsodon nudivittis*, two new records from the north-eastern Arabian Sea (Perciformes, Champsodontidae). *Marine Biodiversity Records*, 7, 1–4. [CrossRef]
- Kalogirou, S. & Corsini-Foka, M. (2012). First record of the Indo-Pacific *Champsodon nudivittis* (Ogilby, 1895) (Perciformes, Champsodontidae) in the Aegean waters (eastern Mediterranean Sea). *BiolInvasions Records*, 1, 229–233. [CrossRef]

- Katsanevakis, S., Ammar, I., Acar, U., Bekas, P., Balci, B. A., Belmonte, M., Chintiroglou, C. C., Consoli, P., Dimiza, M., Fryganiotis, K., Gerovasileiou, V., Gnisci, V., Gulsahin, N., Hoffman, R., Issaris, Y., Izquierdo-Gomez, D., Izquierdo-Munoz, A., Kavadas, S., Koehler, L., Konstantinidis, E., Mazza, G., Nowell, G., Onal, U., Ozen, M.R., Pafilis, P., Pastore, M., Perdikaris, C., Poursanidis, D., Prato, E., Russo, F., Sicuro, B., Tarkan, A.N., Thessalou-Legaki, M., Tiralongo, F., Triantaphyllou, M., Tsiamis, K., Tuncer, S., Turan, C., Turker, A., & Yapici, S. (2014). "New Mediterranean Biodiversity Records (October, 2014)". *Mediterranean Marine Science*, 15, 675-695. [\[CrossRef\]](#)
- Kebapçioğlu, T. & Dereli, H. (2016). First record of gaper (*Champsodon capensis* Regan, 1908) in the Aegean Sea. *Mediterranean Marine Science*, 17(3), 794-821.
- Kousteni, V. & Christidis, G. (2019). Westward range expansion of the Indo-Pacific nakedband gaper *Champsodon nudivittis* (Ogilby, 1895) in Saronikos Gulf, Greece. *BioInvasions Records*, 8(1), 167-174. [\[CrossRef\]](#)
- Nemeth, D. (1994). Systematics and distribution of fishes of the family Champsodontidae (Teleostei: Perciformes), with descriptions of three new species. *Copeia*, 2, 347-371. [\[CrossRef\]](#)
- Yapici, S., Fricke, R. & Filiz, H. (2016). Champsodontids at the gates: first record of *Champsodon vorax* Günther, 1867 from the Aegean Sea (Teleostei: Champsodontidae). *Journal of Applied Ichthyology*, 32(1), 120-122. [\[CrossRef\]](#)
- Yemişken, E., Dalyan, C. & Eryilmaz, L. (2014). Catch and discardfish species of trawl fisheries in the Iskenderun Bay (Northeastern Mediterranean) with emphasis on lessepsian and chondrichthyan species. *Mediterranean Marine Science*, 15(2), 380-389. [\[CrossRef\]](#)