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Research Article

SECOND OCCURRENCE OF *CHRYSAORA PSEUDOOCELLATA* IN ANTALYA GULF, THE EASTERN MEDITERRANEAN SEA

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ABSTRACT. A new alien sea nettle species, *Chrysaora pseudoocellata* reoccurred at location of its first discovery, Belek's coast Antalya, Turkey on 23 June 2021 after three years. In past two years, many surveys were conducted on the coasts of Antalya Gulf for other research purposes. However, this species had not been reported for its reoccurrence along the Turkish coasts up to date.

Keywords: *the sea nettle, reoccurrence, swarm, eastern Mediterranean Sea*

INTRODUCTION

The false eyespot sea nettle, *Chrysaora pseudoocellata* Mutlu, Çağatay, Olguner & Yılmaz 2020 (Cnidaria: Pelagiidae) first occurred in shallow waters of Belek coast, Antalya in July 2018. The false eyespot sea nettle was described first as a new species by Mutlu *et al*. [1] after its rediscovery in December 2018. This species was then ascribed and affirmed as an alien species to the Mediterranean Sea [2, 3] presumably since the species was found closely affinitive to a species of genus *Chrysaora*; an African sea nettle, *Chrysaora africana* (Vanhöffen 1902) by Mutlu *et al*. [1] describing a difference of 10.2% in COI gene related to *Chrysaora africana*.

The species was then observed several times in Israeli coasts in where firstly reported on 5 July 2015 and then 6 July 2019 by Edelist *et al*. [4] without getting nomenclature of the species because of availability of only its underwater photo. The false eyespot sea nettle which was given a common name etymologically in English [1] began to reoccur on July 11, 2019 in the Israeli coasts [5].

The study area was located in coasts anthropogenically influenced in summer by the intensive tourism activities and few brooks with high flow rates of water. This case derived locally eutrophication inducing secondary production.

Up to date, reoccurrence of specimens of the false eyespot sea nettle has not been documented at the literatures in last two years. The present study is aimed to report reoccurrence of *Chrysaora pseudoocellata* schooled for the eastern Mediterranean Sea after December 2018.

MATERIALS AND METHODS

Flock of *Chrysaora pseudoocellata* specimens was observed and one specimen was manually collected on 23 June 2021. The location was situated in 3 nm westerly away from first occurrence of *Chrysaora pseudoocellata* (Fig. 1). Short-time video of specimen in a jar was recorded.

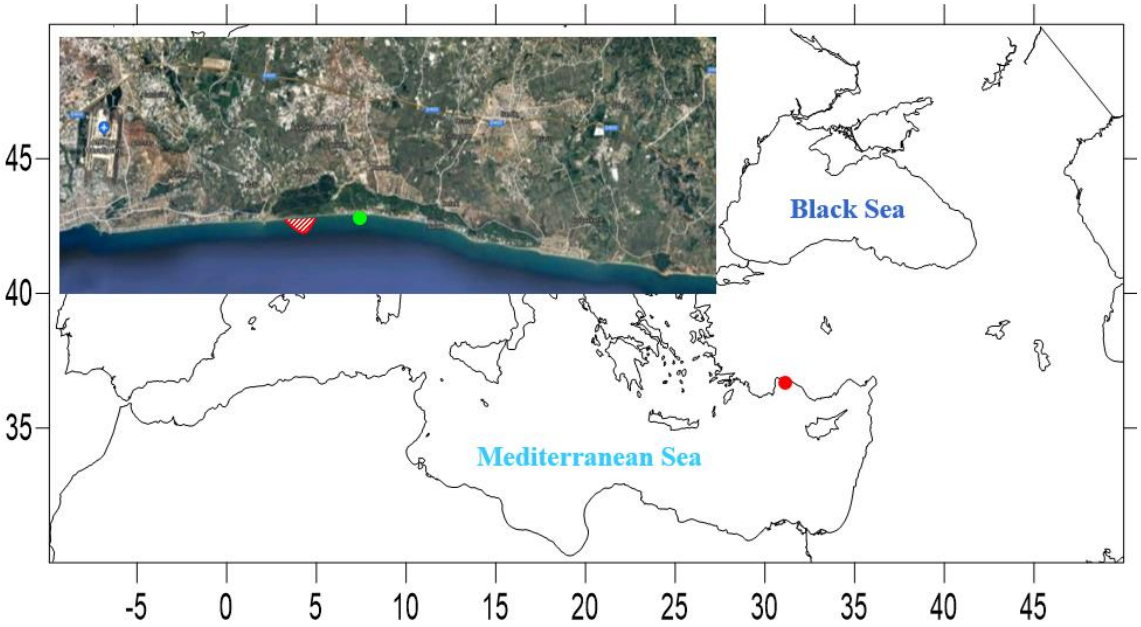

Fig. 1. *Location of first appearance (green circle) [1] and reoccurrence (polygon in red shaded line) of Chrysaora pseudoocellata in the study area (red circle)*

From the photo and video, the specimen was identified according to description performed by Mutlu et al. (2020) briefly; the species had four oral arms, pale exumbrella marked with 16 narrow pigmented stripes in dark reddish brown, eight brown rhopalium pits (false eyes) in dark brown, and an umbrella margin with 6 marginal lappets per octant and 56 tentacles (Fig. 2).

RESULTS AND DISCUSSION

The specimen was adult at medusae stage (Fig. 2) owing to 16 stripes on surface of its exumbrella [1]. Diameter of umbrella was 9.7 cm. In the second appearance, there was a swarm of the species in distributional form at the sea, but was not intensive amount (Fig. 1). After second record of the species in the present study, their swarm disappeared again in few days and then the reoccurrence was announced to some researchers on duty for the survey conducted in the sea.

The species was first occurred in December 2018 (Fig. 1) [1] and then in Israeli waters in 2019 [4, 5]. However, the species has not been reported to re-occur in the Mediterranean Sea up to date even though many researches were conducted along inshore and offshore of the Turkish Seas before.

Fig. 2. *Photo (by Sinan Işık) of one specimen Chrysaora pseudoocellata found during the present study and its specific identities (a; oral arms, s; the exumbrella stripes, t; marginal tentacle, and p; rhopalium pits, false eyespots)*

The reoccurrence of the species is an evidence to exist still along the Turkish Mediterranean coasts in three years after the first discovery. Interestingly, they formed school in winter and summer for paying attention to observatory sightseers. The species were observed in location and seasons where and when the high anthropogenic effect and freshwater input were available presumably deriving and inducing the secondary production which was possible food for the species of the jellyfish [6]. The future studies are required for their density distribution and to sight the species in other locations for their expansion.

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REFERENCES

[1] Mutlu, E., Çağatay, I. T., Olguner, M. T., Yilmaz, H. E. (2020): A new sea-nettle from the Eastern Mediterranean Sea: *Chrysaora pseudoocellata* sp. nov. (Scyphozoa: Pelagiidae). Zootaxa 4790(2): 229-244.

[2] Çinar, M. E., Bilecenoğlu, M., Yokeş, M. B., Öztürk, B., Taşkin, E., Bakir, K., Doğan, A., Açik, Ş. (2021): Current status (as of end of 2020) of marine alien species in Turkey. Plos one, 16(5): e0251086.

[3] Bédry, R., de Haro, L., Bentur, Y., Senechal, N., Galil, B. S. (2021): Toxicological risks on the human health of populations living around the Mediterranean Sea linked to the invasion of non-indigenous marine species from the Red Sea: A review. Toxicon 191: 69-82.

[4] Edelist, D., Kuplik, Z., Guy-Haim, T., Angel, D. (2019): First records of the sea nettle *Chrysaora* sp. (Cnidaria: Scyphozoa: Semaeostomeae: Pelagiidae) in the Levant. *In:*

Dragičević, B., Anadoli, O., Angel, D., Benabdi, M., Bitar, G., Castriota, L., Crocetta, F., Deidun, A., Dulčić, J., Edelist, D., Gerovasileiou, V., Giacobbe, S., Goruppi, A., Guy-Haim, T., Konstantinidis, E., Kuplik, Z., Langeneck, J., Macali, A., Manitaras, I., Michailidis, N., Michaloudi, E., Ovalis, P., Perdikaris, C., Pillon, R., Piraino, S., Renda, W., Rizgalla, J., Spinelli, A., Tempesti, J., Tiralongo, F., Tirelli, V., Tsiamis, K., Turan, C., Uygur, N., Zava, B., & Zenetos, A. (Eds.) New Mediterranean Biodiversity Records 2019. Mediterranean Marine Science 20 (3): 651–652.

[5] Douek, J., Paz, G., Rinkevich, B., Gevili, R., Galil, B. S. (2020): First record of a non-native pelagiid jellyfish (Scyphozoa: Pelagiidae: *Chrysaora*) in the easternmost Mediterranean Sea. BioInvasions Record 9(3): 482–489.

[6] Mutlu, E. (2001): Distribution and abundance of moon jellyfish (*Aurelia aurita*) and its zooplankton food in the Black Sea. Marine Biology 138(2): 329-339.