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Short communication

A new record of an alien jellyfish from the Levantine coast of Turkey - *Cassiopea andromeda* (Forsskål, 1775) [Cnidaria: Scyphozoa: Rhizostomea]

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Abstract

To date, three alien scyphozoan species were reported from the Eastern Mediterranean, but only one, *Rhopilema nomadica*, was reported from the Turkish coast. Recently, a second alien scyphozoan, *Cassiopea andromeda*, was collected on 20 July 2005 in Iskenderun Bay, SE Turkey.

Key words: *Cassiopea andromeda*, Scyphozoa, Levant Sea, Turkey, Iskenderun Bay, alien species

Cassiopea andromeda (Forsskål, 1775) is the first Erythrean scyphomedusan species reported from the Mediterranean following the opening of the Suez Canal. It had been collected in the Suez Canal in 1886 (Galil et al. 1990), and soon after from Cyprus (Maas 1903). Nearly half a century later it was found in Neokameni, a small volcanic island near Thira, in the southern Aegean Sea (Schäffer 1955), and later in Lebanon (Goy et al. 1988) and Israel (Spanier 1989), where it is occasionally found on sandy bottoms in areas protected from wave action.

Two other scyphomedusan species are considered to have entered the Mediterranean through the Suez Canal: *Phyllorhiza punctata* von Lendenfeld, 1884, and *Rhopilema nomadica* Galil, 1990. But while *P. punctata* was reported only from the Israeli coast (Galil et al. 1990), *R. nomadica* was reported from nearly all of the Levant Sea, including a specimen sampled in 1995 in the Bay of Mersin (Kideys and Gucu 1995), and in 1998 in Izmir, on the Aegean coast of Turkey (Galil and Zenetos 2002).

A diving survey to detect possible Erythrean aliens was conducted in the cooling water drainage channel of the Iskenderun Iron Steel Factory (36°11.200'N and 36°43.100'E) on 20.07.2005. The site was sampled monthly since 2002.

Two of the six individuals found which have a mean umbrella length of 5 cm were taken for further investigation in the laboratory, and were determined as *C. andromeda* (Figure 1) according to the identification key given by Galil et al. 1990. The specimens photographed were fixed in 4 % formaldehyde and deposited in the Department of Marine Biology of the Çukurova University (Turkey).

Cassiopea andromeda is widely distributed in the Indo-Pacific where it occurs in shallow lagoons, intertidal sand flats and mangroves The specimens found in the canal were collected at depth of 70 cm, on a muddy sandy bottom, where the temperature at the time was 34°C, salinity 38.51 psu, dissolved oxygen 5.4 mg/l, and pH 8.02, and the mean water temperature is 23°C in winter and 36°C in summer. The physical properties of the canal are: 112 meters in length and 5 meters in width. Schafer (1955) reported that in Neokameni juvenile *C. andromeda* were abundant in rock pools where the water temperature reached 36°C.

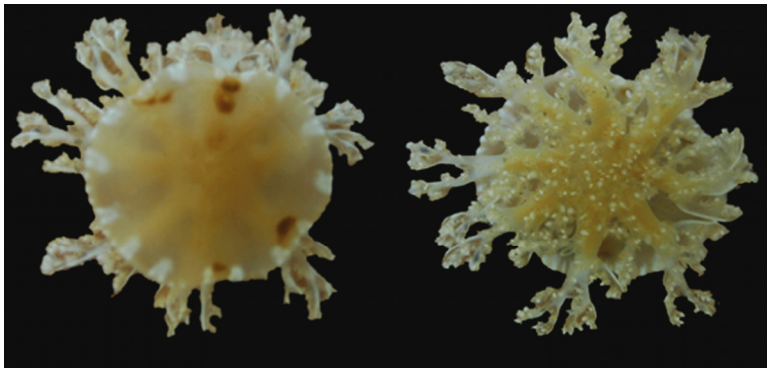

Figure 1. *Cassiopea andromeda* (Forsskål, 1775) (Photographed by Cem Çevik)

Iskenderun Bay (northeastern Levant Sea) has the largest number of Erythrean alien species along the Turkish coast, second only to the number of Erythrean aliens along the Israeli coast. Moreover, many of the Erythrean aliens had been first recorded from Iskenderun Bay before spreading along the Turkish coast. The source of the specimens is unclear: ephyrae may have been carried with the Levantine coastal currents, or it may have arrived as polyps in ship fouling either from Cypriot, Lebanese or Israeli ports, or from further away.

Although the hydrographical conditions in Iskenderun Bay support the establishment of Erythrean aliens, it is believed that anthropogenic impacts such as thermal discharges and buildings activities in the marine environment (e.g. docks and underwater construction work) contribute to this phenomenon. For example a lessepsian mollusk, *Electroma vexillium* (Reeve, 1857) was reported for the first time in the eastern Mediterranean from the canal (Çevik et al. 2005) and during marine monitoring studies many Erythrean aliens are encountered such as *Trochus erythraeus* Brocchi, 1821, *Brachidontes pharaonis* (Fischer P., 1870), *Saccostrea cucullata* (Born, 1778), *Dendrostrea frons* (Linneaus, 1758), *Pinctada radiata* (Leach, 1814), *Malvufundus regulus* (Forsskål, 1775), *Spondylus spinosus* Schreibers, 1793, *S. cf. multisetosus* Reeve, 1856, *Chama pacifica* Broderip, 1834, *Leucosia signata* Paulson, 1875 and *Miccipa thalia* (Herbst, 1803) likely supported by the hot water effluents from the factories discharging into the canal and also artificial reefs, i.e. man-made underwater constructions. For this reason intensive studies on monitoring of Iskenderun Bay must be conducted.

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