

## First record of the scyphomedusa *Rhopilema nomadica* Galil, 1990 (Cnidaria: Scyphozoa: Rhizostomeae) in Greece

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### Abstract

The scyphomedusa *Rhopilema nomadica*, recorded in July 2006 from Lakonikos Gulf, on the Ionian coast of Greece, is a Lessepsian alien established in the Levantine Sea. The jellyfish's painful stings may pose a danger to swimmers. Because of its invasiveness and its impact it is considered among the worst invasive marine species in European Seas.

*Key words:* *Rhopilema nomadica*, Scyphozoa, Ionian Sea, Mediterranean, Red Sea, alien species

Among the invasive alien marine biota in the Mediterranean Sea none threatens human health and well-being more than *Rhopilema nomadica* Galil, 1990 (Cnidaria: Scyphozoa: Rhizostomeae) (in Galil et al. 1990). The nomadic jellyfish had entered the Mediterranean through the Suez Canal in the 1970s, and since the mid 1980s forms large swarms annually along the Levantine coast. When the jellyfish swarms draw nearer shore they adversely affect tourism, fisheries and coastal installations. Local municipalities in Israel reported a decrease in holiday makers frequenting the beaches because of the public's concern over the painful stings inflicted by the jellyfish (Avian et al. 1995, Kokelj et al. 1995). Coastal trawling and purse-seine fishing are disrupted for the duration of the swarming due to net clogging and inability to sort yield, due to the overwhelming presence of the venomous jellyfish in the nets. Jellyfish-

blocked water intake pipes pose a threat to cooling systems of port-bound vessels and coastal power plants (Galil 1993). The proliferation of *R. nomadica* was attributed to its high reproductive capacity (Lotan et al. 1992) and probably to the eutrophic character of the coastal areas (Kideys and Gucu 1995).

In 1995 the jellyfish was recorded off the southeastern coast of Turkey, and in 1998 a single specimen was reported off Izmir, on the Aegean coast of Turkey (Kideys and Gucu 1995, Galil and Zenetos 2002). This spread pattern, in common with other Lessepsian aliens, follows the Levantine current (Malanotte-Rizzoli et al. 1999). Zooplanktonic copepods have shown similar patterns (Lakkis 1990, Siokou-Frangou et al. 1999) (Pearse 1970).

Two specimens of *R. nomadica* (Figure 1) were found in Skoutari Bay, Lakonikos Gulf (Ionian Sea 36°39.33'N, 22°31.06'E) in July

2006. The specimens were photographed and measured but, due to technical reasons, were not collected. Their umbrella diameter was 40 and 42 cm, within the size range given by Spanier and Galil (1991) and Kideys and Gucu (1995).



**Figure 1.** *Rhopilema nomadica* from Skoutari Bay, Lakonikos Gulf, Ionian Sea (Photo by K. Sarantakos)

Given the invasive character of the species and the circulation pattern in the eastern Mediterranean, *R. nomadica* may spread further into the Ionian and south Aegean. As Lakonikos Gulf is unpolluted and lacks big ports or aquaculture farms, the presence of *R. nomadica* may be related to climatic changes rather than to a degraded ecosystem, in agreement with Purcell's proposal (2005) that jellyfish can be used as indicators of global warming. SEBI2010 WG5<sup>1</sup> considers invasive alien species (IAS) as important indicators, and focused on their impacts, awareness and economic cost. *Rhopilema nomadica* is listed by SEBI2010 among the Worst Invasive Marine Species in European Seas.

<sup>1</sup> Streamlining European 2010 Biodiversity Indicators" (SEBI2010). One of the expert groups (WG5) in this project is addressing the indicator on "number and cost of IAS" which includes a list of the Worst Invasive Species <http://biodiversity-chm.eea.eu.int/information/indicator>

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