

ON THE OCCURRENCE OF TWO BRACHYURANS, *MYRA*  
*SUBGRANULATA* AND *HERBSTIA CONDYLIATA*, ON RHODES ISLAND  
(SE AEGEAN SEA)

BY

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ABSTRACT

Two brachyurans, the Erythrean *Myra subgranulata* (Leucosiidae) and the Atlanto-Mediterranean *Herbstia condyliata* (Majidae), were collected from the NE coast of Rhodes Island. The first species' occurrence represents a new record for Greek waters and is the result of a gradual westward extension of its distribution along the eastern Mediterranean coasts, after its immigration from the Red Sea via the Suez Canal. The second species' record is new for Rhodes.

RÉSUMÉ

Deux crabes brachyours, l'érythréen *Myra subgranulata* (Leucosiidae) et l'atlanto-méditerranéen *Herbstia condyliata* (Majidae) ont été récoltés sur la côte nord-orientale de l'île de Rhodes. La présence de la première espèce représente une nouvelle citation pour les eaux grecques et est le résultat de l'extension graduelle de sa répartition vers l'ouest le long des côtes méditerranéennes, après son immigration depuis la mer Rouge via le canal de Suez. La seconde espèce est nouvelle pour Rhodes.

INTRODUCTION

Recent investigations conducted in the sublittoral zone of the island of Rhodes have enlarged the number of decapod crustacean species to 83, and the stomatopods recorded in the area to three (Kevrekidis & Galil, 2003). Among these are six decapods and one stomatopod of Indo-Pacific origin. Successive records of the portunids, *Portunus pelagicus* (Linnaeus, 1758) and *Bathynectes longipes* (Risso, 1816) have increased the number of decapods known from the island to 85 (Corsini Foka et al., 2004).

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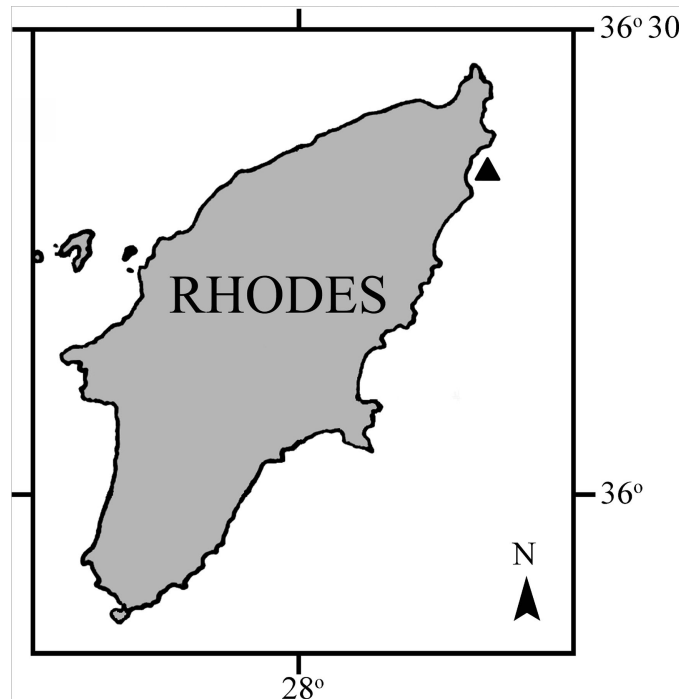


Fig. 1. Sampling location of *Myra subgranulata* Kossmann, 1877 and *Herbstia condyliata* (Fabricius, 1787) in Rhodes Island (▲, Faliraki Gulf).

The occurrence of *Myra subgranulata* Kossmann, 1877 on Rhodes, a new record for Greek waters, shows the gradual expansion of this species' distribution along the Anatolian coasts, where it has been recorded from a far past (Galil et al., 2002), up to the NE coasts of the island, in contact with the Levantine Basin. This obviously increases the number of the Erythrean decapods present in the area. The record of *Herbstia condyliata* (Fabricius, 1787) is new for Rhodes Island and contributes to extend our knowledge on its distribution in the eastern Mediterranean, where it has been sporadically recorded before.

## RESULTS

### *Myra subgranulata* Kossmann, 1877 (fig. 2)

Material examined. — The single female specimen, identified according to Galil (2001), has the typical diagnostic features of the species, as previously described accurately in Galil et al. (2002); collected 10 September 2004 with a fishing net, Gulf of Faliraki, NE coast of Rhodes, at 10 m depth, sandy bottom, sea water temperature 27°C, salinity 39.4 PSU (fig. 1).

Measurements and behaviour. — Live specimen (in mm): carapace length 39.4, width 33.6, and median posterior spine 4.1. Right cheliped total length 82.8, chela

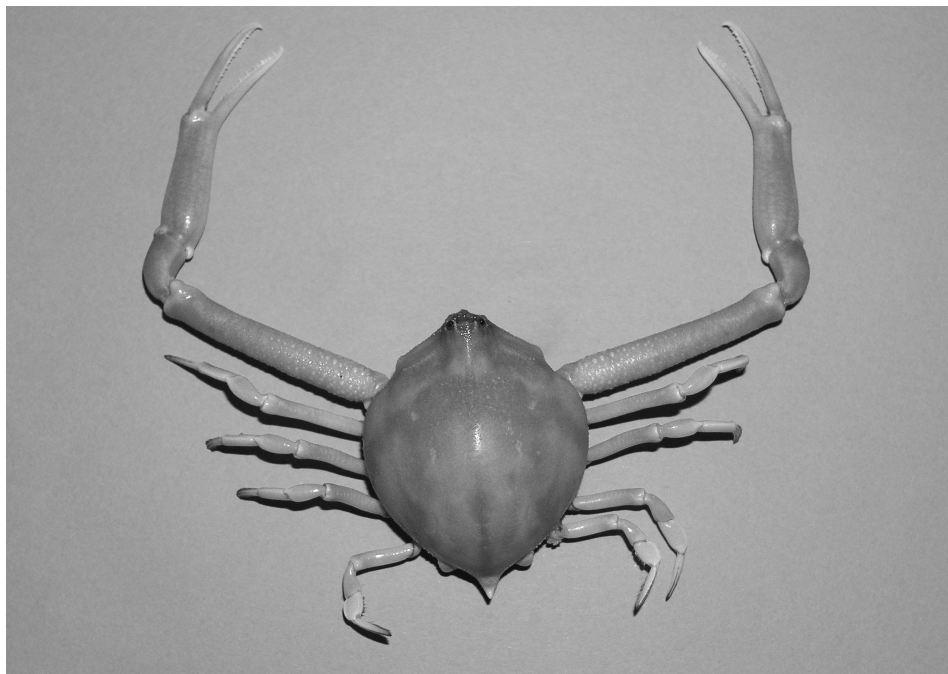


Fig. 2. *Myra subgranulata* Kossmann, 1877, female, dorsal view, in alcohol. Carapace length 39.4 mm.

length 36.9, length of upper margin of cheliped propodus 20.9, dactylus 19.9, carpus 11.8, merus 34.7. Cheliped merus 0.88 of carapace length, dactylus 0.95 of upper margin of cheliped propodus, median posterior spine 0.1 of carapace length. The specimen was kept for one year in a closed seawater aquarium system at the Hydrobiological Station of Rhodes, at ambient temperature. It completely hid its body in the sandy bottom with the exception of its eyes. It is carnivorous, feeding mainly on mussels and shrimps.

Distribution. — This species, frequently misidentified as *Myra fugax* (Fabricius, 1798) (cf. Galil, 2001; Galil et al., 2002), has a wide distribution, comprising Mauritius, Madagascar, South Africa, Moçambique, the Red Sea, the Suez Canal (Galil, 2001), and the eastern Mediterranean. In the Levantine Sea it has been first recorded from Palestine (Monod, 1930), and subsequently from Iskenderun Bay, Turkey (Monod, 1930; Holthuis & Gottlieb, 1958), Egypt (Balss, 1936), and the Lebanon (Shiber, 1981). The occurrence of the species along the Mediterranean coasts of Turkey has been also more recently reported by Kocataş & Katağan (2003), and Özcan et al. (2005).



Fig. 3. *Herbstia condyliata* (Fabricius, 1787), male, dorsal view, live. Carapace length 31 mm.

***Herbstia condyliata* (Fabricius, 1787) (fig. 3)**

Material examined. — One male specimen, identified according to Holthuis (1987) and d'Udekem d'Acoz (2003); collected 16 May 2005 with a fishing net, Gulf of Faliraki, NE coast of Rhodes, at 15 m depth, sandy bottom among rocks, sea water temperature 19°C, salinity 39.0 PSU (fig. 1).

Measurements and behaviour. — Live specimen (in mm): carapace length 31.0, width 28.3. Right cheliped total length 82.8, chela length 36.9, length of upper margin of cheliped propodus 18.1, dactylus 12.6, carpus 8.5, merus 25.9. Cheliped merus 1.20 of carapace length, dactylus 1.43 of upper margin of cheliped propodus. The specimen, currently kept in the aquarium as described for the previous species, hides among rocks, and is carnivorous.

Distribution. — This species is distributed from the southern part of the Bay of Biscay to tropical West Africa, the Azores, Madeira, the Canary Islands, throughout the Mediterranean Sea, and the Sea of Marmara (d'Udekem d'Acoz, 2003). It is also included in the European Register of Marine Species (Türkey, 2001). Concerning Greek Aegean waters, the species has been recorded from the Evvoia marine region (Kattoulas & Koukouras, 1975), from Monenvasia (d'Udekem d'Acoz, 2003), and is listed among the decapods of the Aegean Sea (Koukouras et al., 1992; d'Udekem d'Acoz, 1999). Furthermore, it has been

reported from the Turkish Straits system (Kocataş & Katağan, 2003; Kocataş et al., 2004) and from Cyprus (Lewinsohn & Holthuis, 1986; Kocataş et al., 2001).

#### DISCUSSION

The majority of the exotic species present in Greek waters has been recorded from the southern Aegean Sea, in particularly from Rhodes Island, and from the Dodecanese Islands, where 90% of the exotic biota is represented by Lessepsian migrants (Pancucci-Papadopoulou et al., 2005). This is, of course, a direct result of the geographical position of these islands, influenced by the Levantine Basin, a sea region particularly prone to Erythrean invasion (Galil & Zenetos, 2002).

Ten exotic decapods and one exotic stomatopod have already been recorded in Greek waters. The portunid swimming crab, *Callinectes sapidus* Rathbun, 1896, introduced from the Atlantic into the Mediterranean through transport in ballast water (Galil et al., 2002), has been recorded from the northern Aegean (Serbetis, 1959; Koukouras et al., 1992) and from Rhodes (Lewinsohn, 1976; M. Corsini, pers. obs.). The remaining nine decapods and the stomatopod are Erythrean species. The penaeids, *Marsupenaeus japonicus* (Bate, 1888), *Trachysalambria palaestinensis* (Steinitz, 1932), *Metapenaeopsis aegyptia* Galil & Golani, 1990, *Metapenaeopsis mogiensis consobrina* (Nobili, 1904), the portunid, *Charybdis longicollis* Leene, 1938, the leucosiid, *Ixa monodi* Holthuis & Gottlieb, 1956 (cf. Galil & Kevrekidis, 2002), and the portunid, *Portunus pelagicus* (Linnaeus, 1758) (cf. Corsini Foka et al., 2004) have been recorded from the marine region around Rhodes. The lessepsian stomatopod, *Erugosquilla massavensis* (Kossmann, 1880), already recorded from Crete, southern Aegean Sea, in 1991 (Dounas & Steudel, 1994), occurs also around Rhodes (Galil & Kevrekidis, 2002). It should be noted that a sample of this species, caught with *Squilla mantis* (Linnaeus, 1758) at Karpathos Island in 1963 (collection Mr. G. Kavallakis), is deposited at the Hydrobiological Station of Rhodes. The alpheid, *Alpheus rapacida* De Man, 1908 has been recorded in the SW Aegean Sea (Pancucci-Papadopoulou et al., 2005) and the portunid, *Thalamita poissonii* (Audouin, 1826) has been described from the Peloponnesos, Saronikos Gulf, as *Th. admete* (cf. Kalopissis & Kalopissis, 1984), as well as from Crete (d'Udekem d'Acoz, 1994).

Along the Turkish Mediterranean and Aegean coasts, 26 Erythrean decapod species (Kocataş et al., 2002; Kumlu et al., 2002; Balkis & Çeviker, 2003; Galil et al., 2003) and the Lessepsian stomatopod, *E. massavensis* (cf. Kocataş, 1981) have been observed, representing about 56% of the total number of Erythrean and Indo-Pacific crustacean colonizers (48) (Galil et al., 2003; Galil, 2004, 2005), whereas in Greek waters this percentage, including the present *Myra subgranulata*,

reaches only 23% of the total, just slightly higher than the previously observed 19% (Corsini Foka et al., 2004).

Although the increased interest of the scientific community in the phenomenon of bio-invasion has to be considered to have contributed to the recent density of records, an undoubtedly increasing rate of records of Erythrean exotics, mainly molluscs, crustaceans, polychaetes (Pancucci-Papadopoulou et al., 2005), and fishes (Corsini Foka et al., 2004; Corsini et al., 2005) has been observed for Rhodes in the last decade. These results might be due to the gradual warming of the area, which ultimately promotes exotic colonization (Kevrekidis & Galil, 2003).

The newly recorded *Myra subgranulata* and *Herbstia condyliata* contribute to increase the number of decapod crustaceans listed from Rhodes to 87.

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