MOLLUSCAN DIVERSITY IN THE N. EAST AEGEAN - GREECE

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Abstract
The extensive study of the benthic fauna biodiversity in the Greek NE Aegean, using sieves of different mesh sizes, revealed a molluscan community rich in abundance and species in contrast to general notion that tends to regard the area poor in marine benthic fauna. Focusing on the bivalves, seven species were newly recorded for the area and four additional species were reported for the first time in the Greek waters.
Keywords : Aegean Sea, Eastern Mediterranean, Bivalves.

Introduction
The traditional approach of regarding the eastern Mediterranean as an area poor in marine fauna [1] has been refuted as research studies carried out in the last two decades have revealed new geographic areas, new bathymetric zones and new species [2]. Focusing on the bivalves of the Greek Seas (territorial waters of the Aegean, Ionian, Cretan and Libyan Seas), and in particular the North Aegean, studies have revealed an increase in reported bivalve species from 212 species in 1995 to 243 species in 2004 [2]. Nevertheless, the North Eastern part of the Aegean Sea (an area of great importance since it is the region where the Black Sea Water enters the Mediterranean through the Dardanelles straits) remains one of the less known seas.

Materials and methods
Benthic samples were collected from 26 stations in the course of three cruises (autumns 1998 and 1999 and spring 2000) in the Greek North East Aegean with the aid of Van Veen grab and Box corer samplers. At least three replicates were collected at each station and sieved through 0.5 mm and 1 mm mesh sizes. Molluscan species composition and community structure were analysed separately for the two size fractions (>1 mm, 0.5-1 mm), in order to obtain a more detailed picture of the molluscan diversity in the area, by examining the usually understudied 0.5-1mm fraction. Particularly emphasis was attributed to bivalve species in order to update their inventory in the wider area and across the Greek Seas.

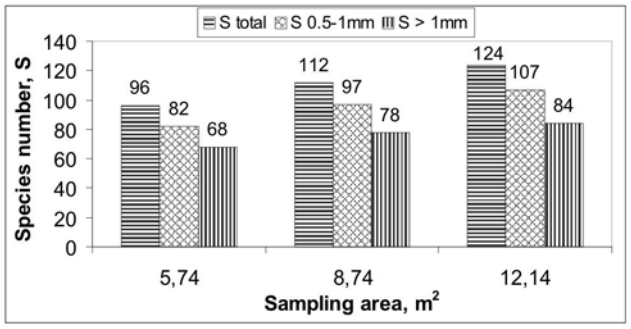

Fig. 1. Species number per increasing sampling area.

Results and Discussion
From a total of 105 samples, at depths of 63-1300 m, (sampling area 12.14 m^2) 3972 molluscs were enumerated, 24.2 % of which were >1mm and 75.8% between 0.5-1mm revealing the dominance of the 0.5-1 mm fraction in benthic studies, a fraction often understudied in the Greek Seas. These numbers represent 19% of the total benthic abundance in the area (a 14% of the fauna >1mm and 22% of the fauna at the 0.5-1mm fraction). Within the Mollusca, Bivalvia accounted for 88.9%, Aplacophora for, 6.5%, Gastropoda for 3.8%, Scaphopoda for 0.6% and Polyplacophora for 0.05%. In the fraction >1 mm 818 Bivalves were counted, 82 Aplacophora, 53 Gastropoda, 9 Scaphopoda and no Polyplacophora, whereas in the 0.5-1mm fraction the numbers were 2716, 179, 99, 14 and 2 respectively, revealing an even distribution of the taxa within the two size fractions.
With regard to the species composition, 124 species were identified, 84 (67.7%) of which were encountered in the >1mm fraction, and 107 (86.3%) in the 0.5-1mm fraction [Fig. 1]. It is interesting that 46 species were found only in the >1mm fraction and 31 only in the 0.5-1mm fraction, thus highlighting the importance of the two fractions in benthic surveys. The recorded molluscan species represent 20.4% of the total benthic species in the area (17.6% of the species >1mm and 24% of the species at the 0.5-1mm fraction), in accordance to the average contribution of the species abundance and density observed in undisturbed soft bottom macrozoobenthic communities [3].
The expected increase in recorded species number with increasing sampling effort (both in terms of employing two size fractions and increasing the sampling area) is also presented in Fig. 1.

Overall, 83 species of Bivalves were recorded. This number is impressive compared to the 243 species recorded over the entire Greek North Aegean [2], and to the 190 species recorded along the Turkish Aegean Sea [4] areas that include many coastal sites, as opposed to the mainly deep water sites examined here. Among these Bivalve species, seven are new to the fauna of the Greek N. East Aegean waters. The species *Coralliophaga lithophagella* (Lamarck, 1819), *Hyalopecten similes* (Laskey, 1811), *Propeamussium fenestratum* (Forbes, 1844), *Scacchia oblonga* (Philippi, 1836), *Solemya togata* (Poli, 1795), *Poromya granulata* (Nyst & Westendorp, 1839) and *Yoldiella lucida* (Loven, 1846) are being reported in the Greek North East Aegean for the first time [2]. In addition, *Epilepton clarkiae* (Clark W., 1852), *Haliris berenicensis* (Sturany, 1896), *Phaseolus ovatus* (Seguenza, 1877), and *Pholadomya loveni* (Jeffreys 1882) are first records of the species in the Greek Seas [2]. The rare *E. clarkiae* was recorded at 63m depth (northeast of Lemnos island) in sandy bottoms, *H . berenicensis* at depths of 307 and 135 m (south and southeast of Lemnos island) on soft bottoms characterized by mud and muddy sand respectively, *P. ovatus* at 151 m in a muddy sand habitat (South east of Lemnos) and *P. loveni* at 132 m in a sandy mud seabed (South east of Lemnos). The current work of this relatively understudied region of the Greek North East Aegean Sea, covering a variety of bathymetric zones away from the traditional shallow coastal areas has revealed the richness of the molluscan community in the area. An analogous study (28 sites, seasonal sampling, 5 replicates, 0.5 mm fraction) in the south Aegean (Cretan Sea) has revealed a total of 109 molluscan species [5]. This work has added new species to the inventory of the species in the area as well as in Greek waters.

References

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