

GEOGRAPHICAL AND VERTICAL DISTRIBUTION OF EUPHAUSIACEA (MALACOSTRACA, CRUSTACEA) IN THE AEGEAN SEA.

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Abstract

The study of quantitative and qualitative samples, taken at various depths in the north Aegean Sea, revealed the presence of 8 species of Euphausiacea: *Euphausia krohnii* (Brandt, 1851), *Meganctiphanes norvegica* (M. Sars, 1857), *Nematoscelis atlantica* Hansen, 1910, *N. megalops* G.O. Sars, 1883, *Stylocheiron abbreviatum* G.O. Sars, 1883, *S. maximum* Hansen, 1908 and *S. suhmii* G.O. Sars, 1883. The analysis of the collected data gave information on the vertical distribution of these species. A checklist of the Mediterranean species is given, along with their geographical distribution in the Aegean Sea and the Mediterranean.

Keywords: Euphausiacea, vertical distribution, Aegean Sea, Mediterranean

Introduction

A review of the literature revealed the presence of 13 Euphausiacea species in the Mediterranean Sea (Table 1). Twelve species are known from the Aegean Sea, but the information stems mainly from the south Aegean (1, 2), while in the north Aegean only 7 species are known (1, 3). Information on the vertical distribution of the Mediterranean species was also given (1, 4). The present study aims to add information on the geographical and vertical distribution of Euphausiacea from semi-quantitative sampling in the north Aegean Sea.

Table 1. Geographical and vertical distribution of the known Euphausiacea species from the Mediterranean, based on the relevant literature and the results of the present study. WM= Western Mediterranean, CM= Central Mediterranean, AD= Adriatic Sea, AS= Aegean Sea (including the Sea of Marmara and the Gulf of Korinthos), LS= Levant Sea, A= Atlantic Ocean, IP= Indo-Pacific Ocean.

Species	Aegean Sea (present study)		Mediterranean Sea (literature)		General distribution	
	Stations	Depth range (m)	Area	Depth range (m)	Oceans	Depth range (m)
<i>Euphausia brevis</i> Hansen, 1905	-	-	WM, CM, AD, AS, LS	0-2000	A, IP	0-3000
<i>Euphausia hemiggiba</i> Hansen, 1910	-	-	WM, CM, AD, AS, LS	0-2000	A, IP	0-2000
<i>Euphausia krohnii</i> (Brandt, 1851)	1-9	250-1000	WM, CM, AD, AS, LS	0-1750	A	0-2200
<i>Meganctiphanes norvegica</i> (M. Sars, 1857)	1-4, 6-11	10-1000	WM, CM, AD, AS	0-1000	A	0-2175
<i>Nematoscelis atlantica</i> Hansen, 1910	12	400	WM, CM, AD, AS, LS	5-2000	A, IP	0-2000
<i>Nematoscelis megalops</i> G.O. Sars, 1883	1-9	250-1000	WM, CM, AD, AS, LS	0-1750	A, IP	0-2175
<i>Nyetiphanes couchii</i> (Bell, 1853)	-	-	WM, CM, AD, AS, LS	12-500	A	0-800
<i>Stylocheiron abbreviatum</i> G.O. Sars, 1883	1-9	250-1000	WM, CM, AD, AS, LS	0-2000	A, IP	0-2000
<i>Stylocheiron longicorne</i> G.O. Sars, 1883	1-9	250-1000	WM, CM, AD, AS, LS	0-2000	A, IP	0-2000
<i>Stylocheiron maximum</i> Hansen, 1908	1-9	250-1000	WM, CM, AD, AS, LS	12-2000	A, IP	12-2000
<i>Stylocheiron suhmii</i> G.O. Sars, 1883	8	250	WM, CM, AD, AS, LS	0-2000	A, IP	0-2000
<i>Thysanoessa gregaria</i> G.O. Sars, 1883	-	-	WM, CM	5-1000	A, IP	0-1000
<i>Thysanopoda aequalis</i> Hansen, 1905	-	-	WM, CM, AD, AS, LS	0-2000	A, IP	0-2000

Materials and methods

During the summer of 1993 an expedition to study the pelagic fauna of the north Aegean Sea was carried out. For this purpose a network of 9 stations was designed (Fig. 1, 1-9). In each station routine diurnal semi-quantitative samples were taken, from 250, 500, 750 and 1000 m depth, with a METHOT mid-water trawl.

Samples collected previously from the north Evoikos Gulf (station 10), the Chalkidiki peninsula, off Agia Paraskeui (station 11) and Porto Koufo (station 11) were also examined.

Results and discussion

A checklist of the Mediterranean species of Euphausiacea, with their geographical and vertical distribution (from the literature and our data), is given (table 1). Ten of the thirteen species are cosmopolitan, and the remaining 3 have an Atlanto-Mediterranean distribution. No species is endemic probably because they are pelagic organisms.

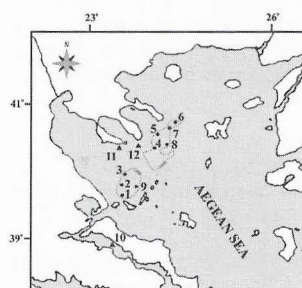


Fig. 1. Map indicating the sampling stations in the north Aegean Sea.

From the 8 species identified in our samples *Nematoscelis atlantica* and *Stylocheiron maximum* are new records for the north Aegean Sea. The most abundant species is *Nematoscelis megalops*, followed by *Euphausia krohnii*, while *N. atlantica* and *S. suhmii* were represented by single specimens.

The vertical distribution and the mean abundance at each depth are provided (Fig. 2). The abundance bulk of *Stylocheiron* species appeared at 250 m depth, while the other species were mainly found in greater depths. Our data agrees with the known diurnal vertical distribution of these species as it results from the literature (4).

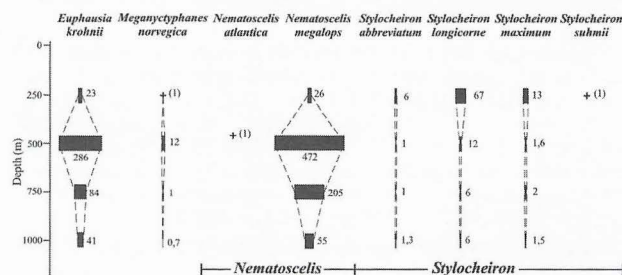


Fig. 2. The diurnal vertical distribution of the 8 Euphausiacea species found in the north Aegean Sea. Numbers show the total mean number of individuals for each depth, while numbers in parenthesis show the absolute number of individuals.

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