

SOFT BOTTOM LUMBRINERIDAE (POLYCHAETA) SPECIES IN IZMIR AND SAROS BAYS (AEGEAN SEA)

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Abstract

The present study deals with Lumbrineridae species on soft substrate in Izmir and Saros Bays located in the Aegean Sea. Benthic samples were collected from 12 stations (20-69 m) in Izmir Bay between 1997 and 1998 and from 18 stations (8-135 m) in Saros Bay in 2000. A total of 13 species were identified, belonging to 6 genera, of which *Lumbricalus adriatica* and *Lumbrinerides cf. acuta* are new records for the marine fauna of Turkey. *Lumbrineris gracilis* and *L. latreilli* were the most abundant species in both areas.

Keywords : *Polychaeta, Systematics, Aegean Sea.*

Introduction

Lumbrineridae Malmgren, 1867 were represented by 250 species and 13 genera worldwide, 22 species and 7 genera in the Mediterranean and 11 species and 5 genera on the coasts of Turkey. On the Turkish coasts, 5 species were reported in the Sea of Marmara [1], 7 species in the Aegean Sea [2] and 8 species in the Levantine Sea [3].

The aims of this study are to determine lumbrinerid species in Izmir and Saros Bays and to investigate their distributional patterns in the areas.

Material and Methods

Lumbrinerids were found a total of 56 samples collected at 30 stations in Izmir (20-69 m, in 1997-1998) and Saros (8-135 m in August 2000) Bays by a van Veen grab (Izmir Bay) and anchor dredge (Saros Bay) (Figure 1). Benthic samples were sieved through 0.5 mm mesh and the retained material was placed in separate jars containing 4% seawater formaldehyde solution. In the laboratory, samples were sorted according to taxonomic groups under a stereomicroscope and preserved in 70% ethanol. Lumbrinerids were separated from other worms, then identified and counted. The Jaccard's Similarity Index was used to assess species associations in the areas.



Fig. 1. Map of investigated area with location of sampling sites.

Results and discussion

The examination of materials collected on soft substrate in Izmir and Saros Bays revealed a total of 1829 specimens belonging to 12 species and 1 subspecies (Table 1). *Lumbricalus adriatica* and *Lumbrinerides cf. acuta* are newly added to the marine fauna of Turkey. The genus *Lumbrineris* was represented by four species and 1569 individuals (86% of the total individuals). The most dominant species in the areas were *Lumbrineris gracilis* (56% of the total individuals) and *L. latreilli* (24%). The densities of *L. gracilis* and *L. latreilli* reached up to 550 individuals/m⁻² and 370 individuals/m⁻² in Izmir Bay, respectively. As a result of Soyer's frequency (F) categorizations, 5 species can be classified as constant (F ≥ 50), 3 species as common (25 ≤ F < 49) and 4 species as rare (F < 25) in Izmir Bay. When it comes to Saros Bay, 4 species can be classified as constant, 1 species as common and 7 species as rare. The most frequent species in the Bays were *L. gracilis*, *L. latreilli* and *Scoletoma impatiens*.

Tab. 1. The list of Lumbrinerid species found and their distribution on biotopes in the study areas (M: Mud, S: Sand, P: *Posidonia oceanica*, Ms: Muddy sand, Sm: Sandy mud).

Study area	Saros Bay				Izmir Bay		
	M	P	Ms	Sm	M	S	Ms
Depth (m)	12-135	8-24	22	20-63	28-62	38	20-69
Number of species	6	8	6	7	8	7	9
<i>Lumbrineris gracilis</i> (Ehlers, 1868)	460	98	76	155	36	23	177
<i>Lumbrineris latreilli</i> (Audouin&Milne-Edwards, 1834)	116	33	14	81	26	40	131
<i>Lumbrineris nonatoi</i> Ramos, 1976	13	3	2	10	5	6	29
<i>Lumbrineris coccinea</i> (Reiner, 1804)	8	1	4	2	7	1	12
<i>Scoletoma impatiens</i> (Claparède, 1868)	79	19	14	31	10	13	31
<i>Scoletoma fragilis</i> (O.F.Müller, 1776)	-	-	4	-	-	3	8
<i>Scoletoma funchalensis</i> (Kinberg, 1865)	-	4	-	-	-	-	2
<i>Scoletoma emandibulata mabiti</i> (Ramos, 1976)	-	4	-	-	-	-	-
<i>Lumbrinerides amoureuvi</i> Miura, 1980	-	-	-	4	1	1	8
<i>Lumbrinerides cf. acuta</i> (Verrill, 1875)	-	-	-	-	1	-	-
<i>Lumbrineriopsis paradoxa</i> (Saint-Joseph, 1888)	-	11	-	1	-	-	-
<i>Lumbricalus adriatica</i> (Fauvel, 1940)	-	2	-	-	-	-	-
<i>Ninoe armoricana</i> (Gilmerec, 1968)	3	-	-	-	5	-	1

According to Jaccard's Similarity Index analysis, three mean species associations were found. The first association consisted of the species *Lumbrinerides cf. acuta* and *Ninoe armoricana*, which were found only in deeper waters (62-69 m). The species *Scoletoma funchalensis*, *S. emandibulata mabiti*, *Lumbrineriopsis paradoxa* and *Lumbricalus adriatica* were grouped at a similarity level of 38%. These species seemed to prefer *Posidonia oceanica* meadows in Saros Bay. The other association included the species *Lumbrineris gracilis*, *L. latreilli*, *L. nonatoi*, *L. coccinea*, *S. impatiens* and *S. fragilis*, which were frequent and dominant species on soft bottoms (without phanerogames) in Izmir and Saros Bays. *Lumbrinerides amoureuvi* was grouped with the latter association at a similarity value of 25%.

A detailed study on lumbrinerids, which was performed along the coast of Crete Island in the Aegean Sea, reported 11 species [4]. *Lumbrineris gracilis* was the most abundant species on the coasts of Crete and Turkey but *Scoletoma emandibulata mabiti* was represented by high number of individuals on the coast of Crete and lower number of individuals on the coast of Turkey. The present study included two species (*Lumbrinerides amoureuvi* and *Lumbrinerides cf. acuta*) which were not found on Crete Island. Furthermore, this study provides some information on Lumbrineridae fauna distributed along the Turkish coast of the Aegean Sea. In order to better understand of the distributional and ecological features of Lumbrineridae species in the area, more samples including different depths and habitats should be collected and investigated.

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