

## SHORT COMMUNICATION

### Marine isopods (Crustacea) of Sinop Bay (Black Sea, Turkey)

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#### Abstract

The aim of the present study was to identify common isopod species of the Sinop coast, and to provide new data that would be useful in the process of characterizing the isopod fauna of the Turkish Black Sea. The samples were collected seasonally at 12 stations (depths 0.5-15 m). A total of 2457 individuals belonging to eight species of marine Isopoda (Crustacea) were recorded. Among these species; *Joeropsis brevicornis littoralis* and *Eurydice spinigera* were reported for the first time in the Black Sea coast of Turkey. *Idotea balthica* had the highest dominance value with up to 980 individuals (80.59% of total individuals). According to Soyer's Frequency Index, two species were constant, the other six species as rare in the study area.

**Keywords:** Isopoda, fauna, diversity, Sinop Peninsula, Black Sea

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#### Introduction

Sinop Bay is situated on the most northern edge of the Turkish side of the Black Sea coast. The bay is characterized by unstable hydrological conditions and this constitutes a mixing zone between the eastern and western Turkish Black Sea for biota. Therefore the biological diversity is relatively rich in this region.

The crustacean order Isopoda (excluding Asellota, crustacean symbionts and freshwater taxa) comprises 3154 described marine species in 379 genera in 37 families according to the WoRMS catalogue (Poor and Bruce 2012). They are

found in marine environments mostly on sea floors. Isopods are often very common and play an important role in marine ecosystem.

The purpose of this study was to determine common marine isopod species living in the coast of Sinop to provide new data that would be useful in the process of characterizing the isopod fauna of the Turkish Black Sea.

## Materials and Methods

The isopod materials were collected seasonally from 12 stations in various types of substrates from July 2001 to May 2002, at depths ranging from 0 to 15 m (Figure 1). The isopod species were collected using dredge and quadrat (20 x 20 cm) at each station. The samples were placed in separate jars and fixed in 5% formaldehyde solution. After rinsing process, the isopod species were separated and then fixed in 70% ethanol. The specimens have been deposited in the Laboratory of Marine Biology, Ege University.

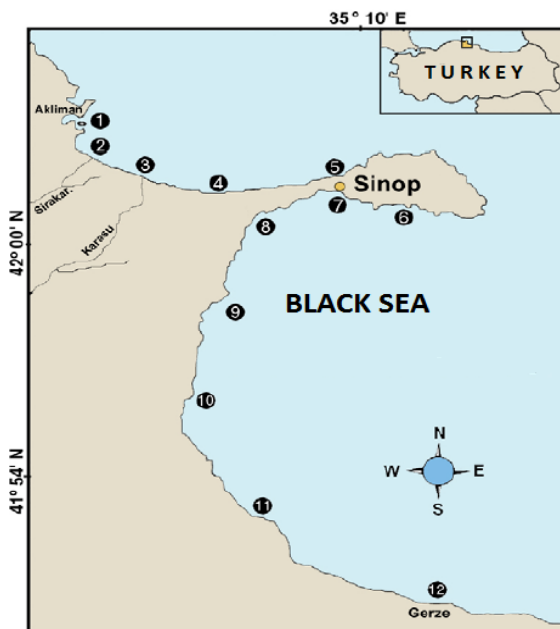
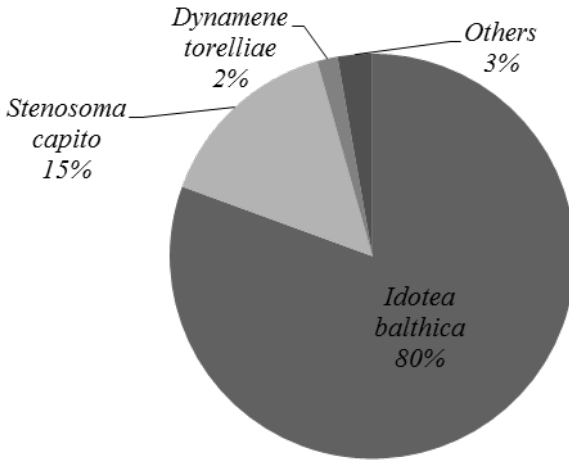


Figure 1. Map of the study area and location of the sampling sites

## Results

During the sampling period, a total of eight species were recorded (Table 1). Considering the species dominance, *Idotea balthica* was the most dominant species represented with 980 individuals (80% of total individuals) followed by *Stenosoma capito* with 45 individuals (15%) (Figure 2).



**Figure 2.** Relative dominance of the isopod species in the number of individuals

Regarding the pattern of temporal occurrence, two species (*I. balthica* and *S. capito*) were considered constant; the other six species that presented in Table 1. were considered rare.

The highest number of species was recorded at stations 5 and 11 (5 species) and the lowest at stations 1 and 4 (2 species). The species and individuals at each station changed with season. The highest number of individuals was found at station 7 (742 ind.) and the lowest at station 4 (13 ind.). The species *I. balthica* with the highest number of specimens was the dominant in spring season (368 ind.) at station 7.

## Discussion

Isopod species at the coast of Sinop were determined in this study. Among the identified species, *Joeropsis brevicornis littoralis* and *Eurydice spinigera* were recorded for the first time in the Black Sea coast of Turkey. Besides, *Lekanesphaera monodi* was recorded from Sinop coast for the first time.

Previous researches carried out in the Turkish Black Sea coasts reported 34 species (Colombo 1885; Collinge 1916; Jones 1969; Kühne 1972; Kırkım *et al.* 2006; Gönügür-Demirci 2006; Karaçuha *et al.* 2009; Gozler *et al.* 2010; Sezgin and Aydemir-Çil 2010; Aydemir-Çil and Sezgin 2013). In this study, eight isopod species are reported from the coast of Sinop. The total number of determined isopod species was increased to 37 in the littoral of Sinop Bay.

**Table 1.** List of identified Isopoda species in Sinop Bay

<b>Species</b>	<b>Station</b>	<b>Habitat</b>	<b>Depth(m)</b>
<i>Joeropsis brevicornis littoralis</i> (Amar, 1949)	3,11	Sand, Muddy/ <i>Zostera</i> spp./ <i>Cystoseira</i> spp	0.5-15
<i>Eurydice spinigera</i> (Hansen, 1890)	2,3,8,10	Sand, Muddy sand/ <i>Zostera</i> spp./ <i>Ulva</i> spp.	0.5-15
<i>Gnathia vorax</i> (Lucas, 1849)	6	Sand/Stone/ <i>Zostera</i> spp.	0.5-15
<i>Sphaeroma serratum</i> (Fabricius, 1787)	5,7,9,11,12	Muddy sand/Stone/ <i>Ulva</i> spp., <i>Cystoseira</i> spp.	0.5-15
<i>Lekanesphaera monodi</i> (Arcangeli, 1934)	5,7	Muddy sand/Stone/ <i>Ulva</i> spp., <i>Zostera</i> spp.	0.5-15
<i>Dynamene torelliae</i> (Holdich, 1968)	5,6,11,12	Sand/Stone/ <i>Zostera</i> spp., <i>Cystoseira</i> spp.	0.5-15
<i>Stenosoma capito</i> (Rathke, 1837)	1-3,6-12	Sand, Muddy/ <i>Zostera</i> spp./ <i>Cystoseira</i> spp.	0.5-15
<i>Idotea balthica</i> (Pallas, 1772)	1-3,5-12	Sand, Muddy/ <i>Zostera</i> spp./ <i>Cystoseira</i> spp.	0.5-15

As a result, the study was to characterize the composition of isopod crustaceans inhabiting the littoral bottom of Sinop coast. This information will provide a basis for future comparative work and monitoring programs in the study region, so that habitat protection and ecological management can be facilitated for the Turkish Black Sea.

## **Sinop Körfezi'nin Yaygın Denizel İso pod Krustaseleri (Karadeniz, Türkiye)**

### **Özet**

Çalışmanın amacı Sinop kıyılarının yaygın isopod türlerinin tanımlanması ve Türkiye'nin Karadeniz isopod faunasının karakterizasyonuna katkı sağlayacak yeni bilgiler elde edilmesidir. Örnekler mevsimsel olarak 12 farklı istasyonun 0.5-15 m derinliklerinden toplanmıştır. Araştırma bölgesinde sekiz isopod (Crustacea) türüne ait toplam 2457 birey elde edilmiştir. Bu türler arasında; *Joeropsis brevicornis littoralis* ve *Eurydice spinigera* Türkiye'nin Karadeniz kıyılarından ilk kez rapor edilmektedir. *Idotea balthica* 980 birey ile (toplam bireylerin %80'i) en yüksek dominansi değerine sahip olmuştur. Soyer'in frekans indeksine göre 2 tür devamlı ve geri kalan 6 tür ise nadirdir.

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