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Crustaceans Collected in Upper-infralittoral Zone of the Gallipoli Peninsula, Turkey

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Abstract: In the present study, specific composition of crustacea species collected at upper-infralittoral depths (0-5 m) in Gallipoli Peninsula, Turkey between November 2000 and October 2001 was presented. A total of 5136 specimens belonging to 27 species (13 amphipods, 9 decapods and 5 isopods) were identified. The dominant taxon is amphipoda with 13 species and 3773 individuals.

Key words: Crustacea Fauna, Gallipoli Peninsula, Turkey

INTRODUCTION

Faunistic data on crustacea species of the Gallipoli Peninsula are scarce and fragmentary. Previous studies on amphipods, isopods and decapods of the Turkish Straits system (the Dardanelles, the Sea of Marmara and the Bosphorus) were carried out by Colombo[1], Ostroumoff[2], Sowinsky[3,4], Collinge[5], Demir[6], Caspers[7], Kocatas and Katagan[8], Kocatas[9], Müler[10], Kocatas and Katagan[11], Topaloğlu and Kihara[12], Öztürk *et al.*[13], Balkis and Albayrak[14] and Balkis *et al.*[15]. The objective of the present study was to describe the species composition and diversity of the amphipod, isopod and decapod species at the coasts of Gallipoli Peninsula.

MATERIALS AND METHODS

The study area (Fig. 1) is located in Gallipoli Peninsula, Turkey. The analyzed benthos are situated between 0 and 5 m deep and selected for sampling the coastline of 126 km in Gallipoli Peninsula. The samples were taken as monthly from 7 stations from November 2000 to October 2001. For sampling, Van Veen grab of 20x20 cm was used. After collection, in the Laboratory sediment was washed over a sieve column with a mesh size of 0.5 mm and preserved in 70% ethanol. Later, all amphipods, isopods and decapods were counted and identified to species level based[16-25]. The biotopes type of the stations are given below; stations 1 and 2 was covered with photophilic algae; station 3 was covered with *Zostera marina* (L.) meadows; station 4 was covered with *Posidonia oceanica* (L.) Delile, 1813 meadows; station 5 was sandy; station 6 was muddy-sandy and station 7 was muddy.

RESULTS AND DISCUSSION

A total of 5136 specimens of crustaceans (Mysidacea, Cumacea and Tanaidacea excluded) pertaining to 27 species were collected (Table 1). Amphipods were the most diversified taxon (13 species), followed by decapods (9) and isopods (5). In terms of percentage frequency of occurrence, the amphipod *Jassa marmorata* was the dominant species (F= 22.43%), followed by the amphipod *Hyale crassipes* (21.94% F) and *Ampithoe ramondi* (18.93% F). Other common species included the isopod *Idotea balthica* (9.27% F); the decapod *Pisidia bluteli* (8.66% F) and *Pestarella tyrrhena* (4.73% F). Total abundance of the groups are as follows: 73% amphipods, 16% decapods and 11% isopods (Fig. 2).

The number of species and specimens at the stations were shown in Fig. 3. Photophilic algae biotope is the richest with 2539 specimens (49.43% F) and 24 species, followed by *Posidonia oceanica* (L.) Delile, 1813 meadows 1316 specimens (25.62% F) and 8 species, *Zostera marina* (L.) meadows 769 specimens (14.97% F) and 8 species, sandy 436 specimens (8.99% F) and 6 species and muddy 55 specimens (1.07% F) and 6 species. The poorest biotope was sandy-muddy 21 specimens (0.4% F) and 2 species (Fig. 4).

In this study, 27 crustacea species (13 amphipods, 9 decapods and 5 isopods) were recorded from the Gallipoli Peninsula, Turkey. In previous studies conducted on crustacea fauna of the Turkish Straits System, in the Dardanelles Colombo[1] reported 25 decapods, in the Bosphorus, Ostroumoff[2] 54, in the Sea of Marmara, Demir[6] 49, Kocatas[9] 23, Müller[10] 98 and Kocatas and Katagan[11] 101. Recently, Kocatas

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Table 1: Crustaceans collected in the upper-infralittoral zone, Gallipoli Peninsula

	Stations								
Taxon	1	2	3	4	5	6	7	n[a]	Frequency (%)[b]
Amphipoda									
Apherusa bispinosa (Bate, 1857)	16	-	-	-	-	-	-	16	0.31
Amphelisca sarci (Chevreux, 1888)	-	-	-	-	56	10	-	66	1.29
Ampithoe ramondi (Audouin, 1826)	146	213	148	465	-	-	-	972	18.93
Caprella equilibra (Say, 1818)	7	-	-	-	-	-	-	7	0.14
Cymadusa crassicornis (Costa, 1857)	-	-	88	21	-	-	10	119	2.32
Dexamine spinosa (Montagu, 1813)	-	15	21	-	13	11	-	60	1.17
Dexamine spiniventris (Costa, 1853)	-	-	40	-	17	-	-	57	1.11
Elasmopus pocillimanus (Bate, 1862)	-	42	11	57	-	-	-	110	2.14
Gammarella fucicola (Leach, 1814)	38	-	-	-	-	-	12	50	0.97
Gammarus subtypicus Stock, 1966	36	-	-	-	-	-	-	36	0.70
Hyale crassipes (Heller, 1866)	417	175	292	243	-	-	-	1127	21.94
Jassa marmorata (Holmes, 1903)	488	163	86	415	-	-	-	1152	22.43
Stenothoe sp.	1	-	-	-	-	-	-	1	0.02
Decapoda									
Athanas nitescens (Leach, 1814)	18	-	-	-	-	-	4	22	0.43
Pestarella tyrrhena (Petagna, 1792)	-	161	-	-	82	-	-	243	4.73
Carcinus aestuarii (Nardo, 1847)	3	-	-	-	-	-	2	5	0.10
Hippolyte inermis (Leach, 1815)	-	12	-	-	-	-	-	12	0.23
H. leptocerus (Heller, 1863)	-	23	-	-	28	-	-	51	0.99
Pilumnus hirtellus (Linnaeus, 1761)	5	3	-	7	-	-	-	15	0.29
Pisidia bluteli (Risso, 1816)	301	-	83	61	-	-	-	445	8.66
Upogebia pusilla (Petagna, 1792)	-	19	-	-	-	-	-	19	0.37
Xantho poressa (Olivi, 1792)	-	3	-	-	-	-	-	3	0.06
Isopoda									
Bagatus stebbingi (Monod, 1933)	14	-	-	-	-	-	20	34	0.66
Dynamene torelliae (Holdich, 1968)	-	19	-	-	-	-	-	19	0.37
Idotea balthica (Pallas, 1772)	128	54	-	47	240	-	7	476	9.27
Synisoma capito (Rathke, 1837)	3	-	-	-	-	-	-	3	0.06
Uromunna petiti (Amar, 1948)	16	-	-	-	-	-	-	16	0.31
Total	1637	902	769	1316	436	21	55	5136	100

a : Number of specimens b : Percentage frequency of occurrence

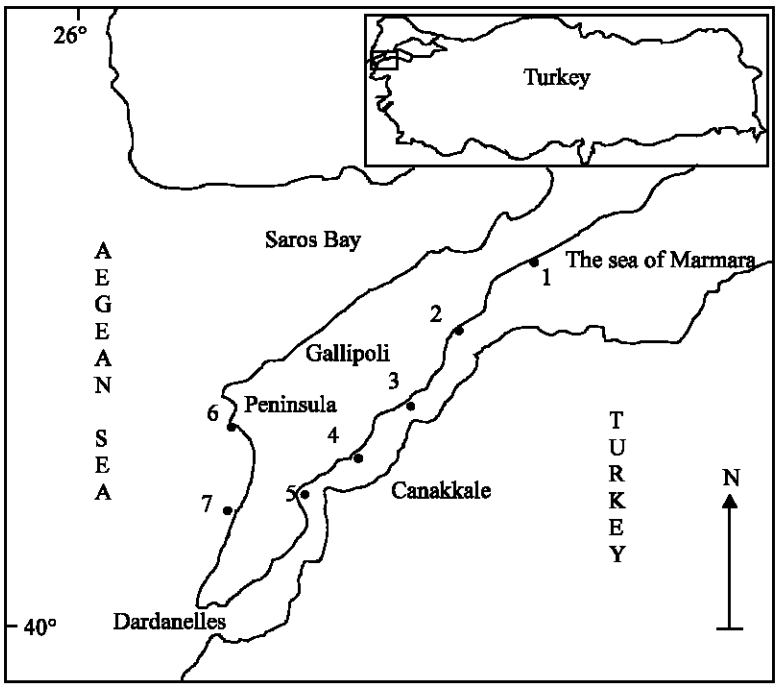

Fig. 1: Location of the study area showing stations

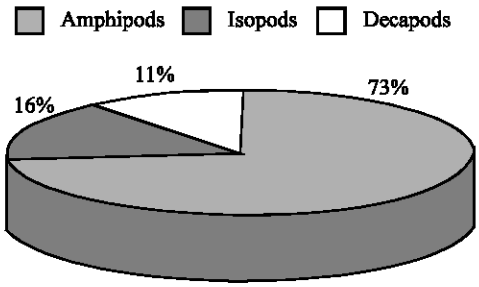

Fig. 2: The percentage abundance of groups

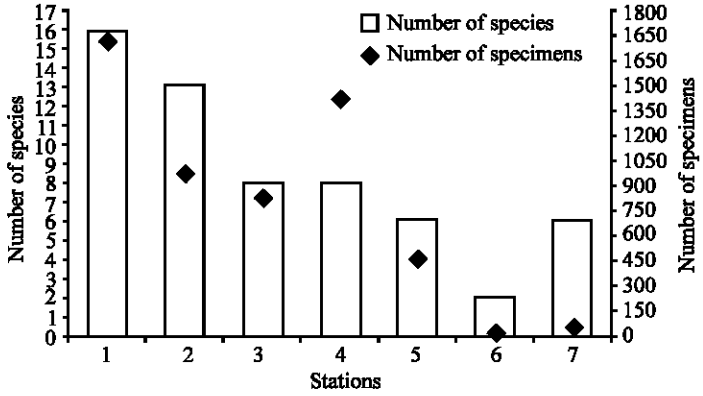

Fig. 3: The numbers of species and individuals at the stations

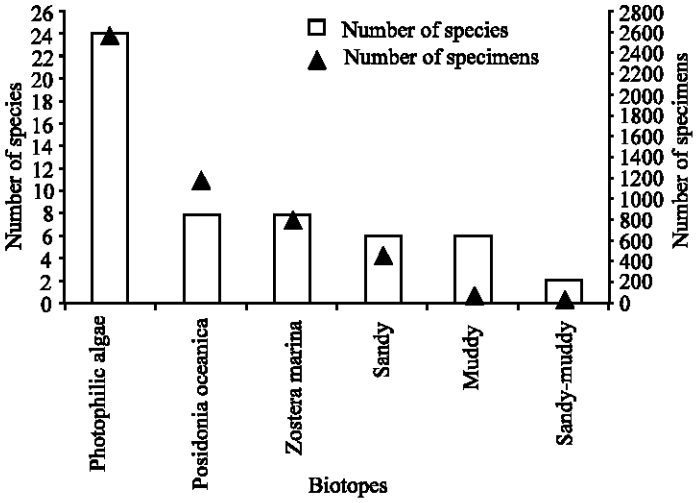

Fig. 4: The numbers of species and individuals in biotopes

and Katagan[26] emphasized that the number of decapod species recorded from the Turkish Straits System is 110.

In the Bosphorus and the Sea of Marmara, Sowinsky[4] recorded 42 amphipods, Demir[6] 27, Casper[7] 2,Topaloğlu and Kihara[12] 13, Balkis[14] 6, Balkis and Albayrak[14] 20, Balkis *et al.*[15] 37 and Kocatas and Katagan[8] recorded 16 amphipods from the Bosphorus, 41 the Sea of Marmara and 24 the Dardanelles. Sezgin[27] indicated that 59 amphipod species were reported from the Sea of Marmara up to date.

Comparing this fauna to that found in cited studies, because of within the limits of the narrow depth range here studied (0-5 m), the species composition of crustacea recorded in this study is scarce.

Posidonia oceanica (L.) Delile, 1813 meadows is an important endemic species in the Mediterranean ecosystem and have a rich crustacea fauna[28]. In the nvestigation area, *P. oceanica* (L.) Delile, 1813 meadows were observed only at station 4 (0-2.5 m) and a few of *P. oceanica* (L.) Delile, 1813 samples were taken at this station. As a results, only 8 species of crustacea (5 amphipods, 1 isopods and 2 decapods) were recorded in this biotope. However, Kirkim[29] reported 24 isopod species, Ates[30] 75 decapod species, Katağan *et al.*[31] 40 and Sezgin[27] 83 amphipod species in *P. oceanica* (L.) Delile, 1813 meadows of the Aegean sea coasts of Turkey, The relatively few number of species recorded in the present study was due to limited number of sampling stations and due to samplings from the upper infralittoral zone.

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