

A Survey on the Brachyura (Crustacea, Decapoda) in the Dardanelles

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Abstract: This study is on the Decapoda Brachyura found in the Dardanelles, included in the Turkish Straits system. Samples of Brachyura were collected at different depths (0-40 m) at 5 stations chosen in the Dardanelles, using a set fishing net and scuba divers during 1998-1999. A total of 19 species belonging to the Brachyura was identified, and 12 of these are new records for the Dardanelles. However, *Parthenope angulifrons* Latreille, 1825 is reported from the Turkish Straits system for the first time.

Key Words: Decapoda, Brachyura, Dardanelles, Turkey

Çanakkale Boğazı'ndaki Brachyura (Crustacea, Decapoda)'lar Üzerine Bir İnceleme

Özet: Bu çalışma Türk Boğazlar Sistemine dahil olan Çanakkale Boğazı'nda bulunan Brachyura (Decapoda)'lar üzerinedir. Brachyura örnekleri 1998-1999 periyodu sırasında uzatma balıkçı ağıları ve SCUBA dalış yöntemi kullanılarak Çanakkale Boğazı'ndan seçilen 5 istasyonun farklı derinliklerinden (0-40 m) toplanmıştır. Brachyura'lara ait toplam 19 tür tanımlanmış ve bunlardan 12'si Çanakkale Boğazı için yeni kayıttır. Bununla birlikte, *Parthenope angulifrons* Latreille, 1825 Türk Boğazlar Sisteminden ilk kez rapor edilmiştir.

Anahtar Sözcükler: Decapoda, Brachyura, Çanakkale Boğazı, Türkiye

Introduction

The Brachyurans of the Turkish Straits System (Bosporus, Sea of Marmara, and Dardanelles) is relatively well known (Demir, 1952; Kocataş, 1981; Müller, 1986; Holthuis, 1987; Kocataş and Katağan, 1993; Balkis, 1994; Kocataş and Katağan, 2003). Balkis (1994) recorded 24 brachyuran crabs from the Sea of Marmara. Then Kocataş and Katağan (2003) published a checklist of the Turkish seas decapods that included 220 species, among which 46 brachyurans were from the Turkish Straits system. Nevertheless, the Dardanelles are the most poorly studied area of the Turkish straits, and little information is available on the Brachyura from the Dardanelles. The first comprehensive report on the brachyurans of the area was presented by Müller (1986). This study reports the results of a survey of Brachyura in the Dardanelles.

Materials and Methods

The Dardanelles, connecting the northern Aegean Sea with the southern end of the Sea of Marmara, have a coastline of 61 km and a maximum depth of 100 m. The area is characterized by different biotopes, such as sand, mud, photophilic algae, rocks, and beds of seaweeds *Posidonia oceanica* (L.) Delile and *Zostera marina* L.

The material reported herein was collected by scuba divers and set nets in 1998 and 1999 from the supralittoral, mediolittoral, and infralittoral zones of 5 stations distributed along the length of the Dardanelles (Figure). The depth range was from 0 to 40 m. Habitats like rocks covered with photophilic algae, and seagrass of *Posidonia oceanica* and *Zostera marina*, were sampled by hand. After collection, all crab samples were fixed with 4% formalin seawater. The Brachyura were classified according to Zariquiey Alvarez (1968), Noël (1992), and Falciai and Minervini (1996).

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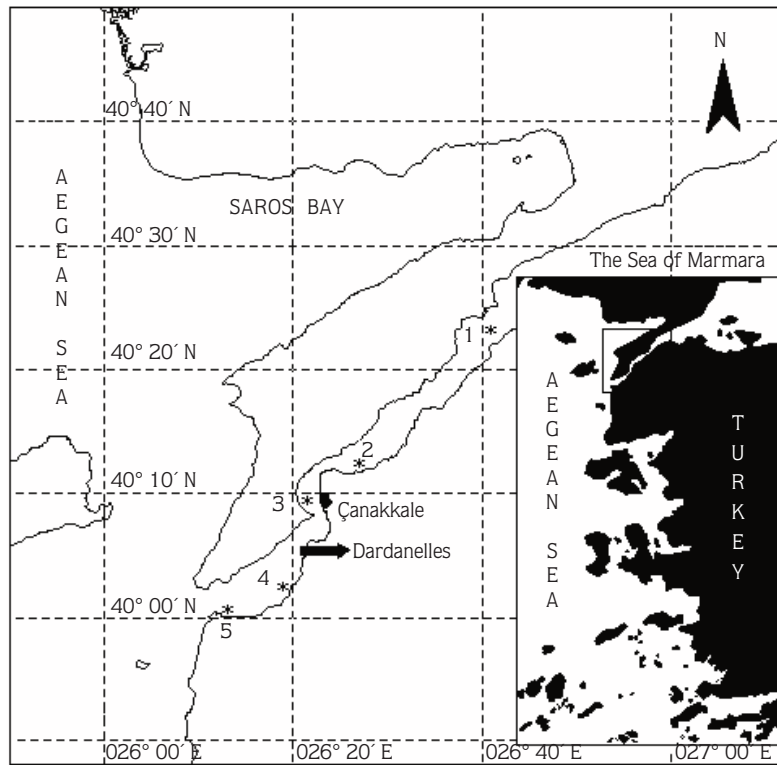


Figure. Map of the study area showing the sampling stations.

Results and Discussion

A total of 19 species belonging to Decapoda Brachyura were collected (Table).

Müller (1986) reported a total of 18 brachyurans from the Dardanelles. The species reported herein (Table) are components of the Mediterranean Sea fauna and show a wide distribution in the Sea of Marmara. Throughout the sampling program, *C. aestuarii* Nardo, 1847, *E. verrucosa* (Forskål, 1775), *P. marmoratus* (J.C. Fabricius, 1787), and *X. poessa* (Olivi, 1792) occurred at all stations. Eleven species reported previously by Müller (1986) were not recorded in this study: *Achaeus cranchii* Leach, 1817, *Bathynectes longipes* (Risso, 1816), *Ebalia tuberosa* (Pennant, 1777), *Eurynome aspera* (Pennant, 1777), *Inachus leptochirus* Leach, 1817, *I. thoracicus* Roux, 1830, *Liocarcinus corrugatus* (Pennant, 1777), *L. navigator* (Herbst, 1794) subsp. *rondeleti* (Risso, 1816), *Parhenope massena* (Roux, 1830), *Pilumnus spinifer* H. Milne Edwards, 1834, and *Pisa armata* (Latreille, 1803). Of these, Balkis (1994) only recorded *E. aspera* (Pennant, 1777) and *L. navigator*

(Herbst, 1794) *rondeleti* (Risso, 1816) from the Sea of Marmara. Three species, i.e. *Calappa granulata* (Linnaeus, 1758), *Illia nucleus* (Linnaeus, 1758) and the subtropical-temperate East Atlantic element *Pisa tetraodon* (Pennant, 1777), which we found in our study, were not reported by Müller (1986) or Balkis (1994) from the Turkish Straits system in the past. However, Kocataş and Katağan (2003) reported these 3 species for the Turkish Straits system, from their own collecting surveys.

The majority (78.95%) of the Brachyura species found in the area are of Atlanto-Mediterranean origin. The present study increased to 30 the number of species known from the Dardanelles by 12 new records. Comparing the Brachyura fauna in the Dardanelles to that found in the Sea of Marmara, our results show that Brachyura fauna in the Dardanelles has a higher species richness. This may be related to its more direct relation with the Aegean Sea fauna.

In conclusion, continuing investigations on the fauna may add additional records to the brachyuran fauna.

Table. List of the Brachyura found in the Dardanelles in this survey. S, sand; M, mud; SM, sandy mud; Ro, rocks; P, phanerogams (*Posidonia oceanica* (L.) Delile; *Zostera marina* L.); A, algae; (-), species not recorded, and (+), species recorded by Müller (1986); (*), *Pinnotheres pisum* was found in *Pinna nobilis* Linnaeus, 1758 (Bivalvia).

Species	Depth (m)	Substrate	Müller (1986)	Stations
<i>Calappa granulata</i> (Linnaeus, 1758)	30-40	SM	-	3,4,5
<i>Carcinus aestuarii</i> Nardo, 1847	0-6	S/P	-	1,2,3,4,5
<i>Dromia personata</i> (Linnaeus, 1758)	10-11	SM	-	4,5
<i>Eriphia verrucosa</i> (Forskål, 1775)	0-2	Ro	-	1,2,3,4,5
<i>Goneplax rhomboides</i> (Linnaeus, 1758)	15-20	SM	-	3,4
<i>Illia nucleus</i> (Linnaeus, 1758)	10-15	M	-	1,2,4
<i>Inachus dorsettensis</i> (Pennant, 1777)	7-30	S/P	+	1,2,4
<i>Liocarcinus depurator</i> (Linnaeus, 1758)	15-35	SM	-	1,3,4,5
<i>Liocarcinus vernalis</i> (Risso, 1827)	9-10	S	-	1,3,4
<i>Macropodia longirostris</i> (Fabricius, 1775)	7-30	A/P	+	4,5
<i>Macropodia rostrata</i> (Linnaeus, 1761)	7-25	A/P	+	4,5
<i>Maja crispata</i> Risso, 1827	15-35	A/S	+	1,2,3,4
<i>Medorippe lanata</i> (Linnaeus, 1767)	25-30	M	-	2,3,4
<i>Pachygrapsus marmoratus</i> (J.C. Fabricius, 1787)	4-6	Ro	+	1,2,3,4,5
<i>Parthenope angulifrons</i> Latreille, 1825	20	SM	-	1
<i>Pilumnus hirtellus</i> (Linnaeus, 1761)	25-30	Ro	+	1,2,3
<i>Pinnotheres pisum</i> (Linnaeus, 1767)	15-20	*	-	2,4
<i>Pisa tetraodon</i> (Pennant, 1777)	0-4	A	-	1,3,4
<i>Xantho poressa</i> (Olivi, 1792)	4-5	Ro	+	1,2,3,4,5

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