

## ***Liocarcinus depurator* (Linnaeus, 1758) and *Brachynotus sexdentatus* (Risso, 1827) (Decapoda, Brachyura), Two New Records for the Turkish Black Sea Fauna**

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**Abstract:** The present study is on 2 Brachyura species, collected by a scuba diver during investigations on the decapod fauna of the Sinop Peninsula shores of the Western Black Sea region, Turkey, between June, 1995, and July, 1996.

*Liocarcinus depurator* (Linnaeus, 1758) and *Brachynotus sexdentatus* (Risso, 1827), which was found in the study area, has not been reported previously from Turkish Black Sea coastal waters.

**Key Words:** Crustacea Decapoda, Brachyura, Black Sea.

### **Türkiye Karadeniz Faunası İçin İki Yeni Kayıt: *Liocarcinus depurator* (Linnaeus, 1758) ve *Brachynotus sexdentatus* (Risso, 1827) (Decapoda, Brachyura)**

**Özet:** Bu çalışmada, Haziran 1995 ve Temmuz 1996 tarihleri arasında Türkiye'nin Batı Karadeniz Bölgesindeki Sinop Yarımadasının dekapod faunası üzerine incelemeler sırasında dalma yöntemiyle toplanan iki yengeç türüyle ilgilidir. Araştırma alanımızda tespit edilen *Liocarcinus depurator* (Linnaeus, 1758) ve *Brachynotus sexdentatus* (Risso, 1827), daha önceden Türkiye'nin Karadeniz kıyılarından rapor edilmemiştir.

**Anahtar Sözcükler:** Crustacea Decapoda, Brachyura, Karadeniz.

### **Introduction**

The first study on the Brachyura of Turkish coasts was performed by Forskäl (1775), who found two species, *Pinnotheres pinnotheres* (Linnaeus, 1758) and *Eriphia verrucosa* (Forskäl, 1775) from the shores of the Sea of Marmara and the Turkish Aegean Sea. The second important study was carried out by Colombo (1885), who reported six species belonging to Brachyura from the Bosphorus, the Sea of Marmara and the Dardanelles (1).

However, the first study in the Turkish Black Sea coasts was done by Holthuis (2), who reported seven species. Kocataş (3) increased the number of known Brachyura of the Turkish Black Sea shores by one more. *Sirpus zariquieyi* Gordon, 1953. Holthuis (4) also recorded a new species, *Liocarcinus arcuatus* (Leach, 1918), from the Black Sea coasts of Turkey. A total of nine Brachyura species have been reported from the Turkish Black Sea coastal waters.

### **Material and Method**

Material employed in this study was collected from 4

different stations between June, 1995, and July, 1996, from depths of 0-10 meters by a scuba diver. The individuals were sexed and measured. The samples collected were preserved in 4% formaldehyde marine salt water. The map of the study area is shown in figure 1.

### **Results**

#### ***Liocarcinus depurator* (Linnaeus, 1758)**

Material examined - Black Sea: Stations 42°4'N 35°3.5'E, depth 5 m, sandy bottom, 26 June 1995, 20 specimens average carapace length 22 mm and width 34 mm, 41°55'N 35°7'E, depth 5 m, sandy bottom, 26 June 1995, 7 specimens average carapace length 19 mm and width 28 mm, 41°55'N 35°7'E, depth 9 m, sandy bottom, 15 July 1995, 15 specimens average carapace length 21 mm and width 30 mm, 41°55'N 35°7'E, depth 10 m, sandy bottom, 21 August 1995, 20 specimens average carapace length 24 mm and width 33 mm, 41°53'N 35°10'E, depth 8 m, sandy bottom, 21 August 1995, 30 specimens average carapace length 25 mm and width 33 mm, 41°53'N 35°10' E, depth 10 m, sandy bottom, 22

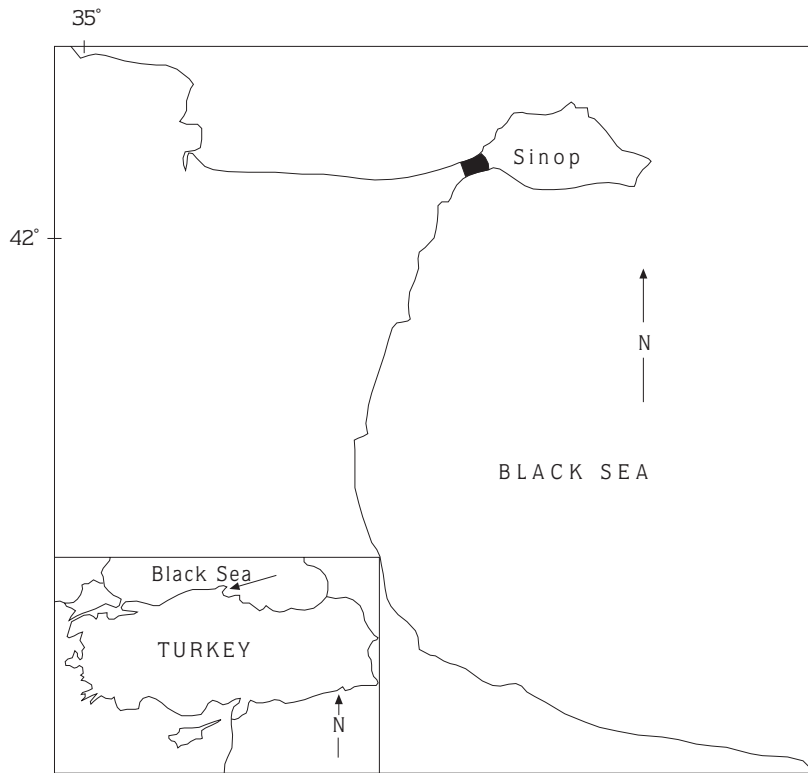


Figure 1. The map of the study area

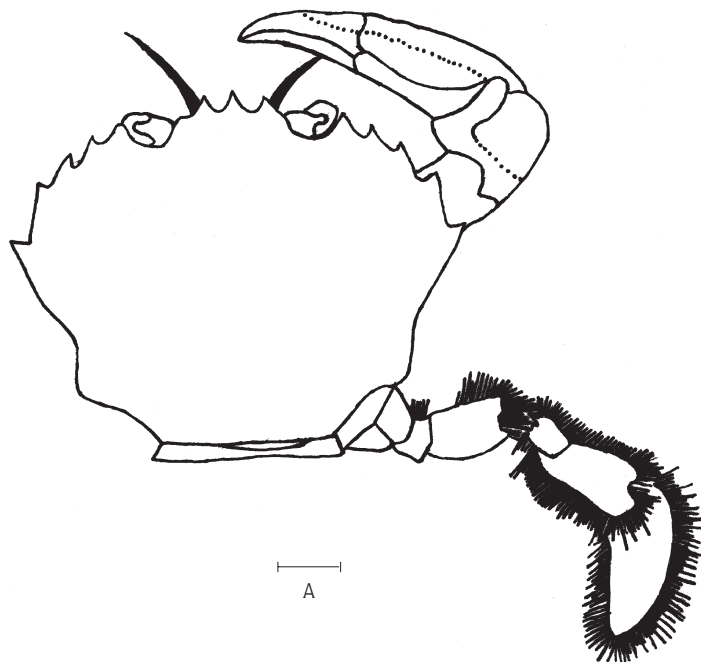


Figure 2. *Liocarcinus depurator*, dorsal view of carapace and first, fifth pereiopods. Scale of A=5.74 mm.

July 1996, 8 specimens average carapace length 21 mm and width 31 mm, figure 2.

The Sinop coast specimens investigated were consistent with the description given by Noël (5) and

Balkis (6). While in Noël's (5) material the carapace measurements are 40 and 52 mm, Zariquiey Alvares's (7) measurements are 39.8 and 51.7 mm. It is obvious that the difference between the two measurements is not

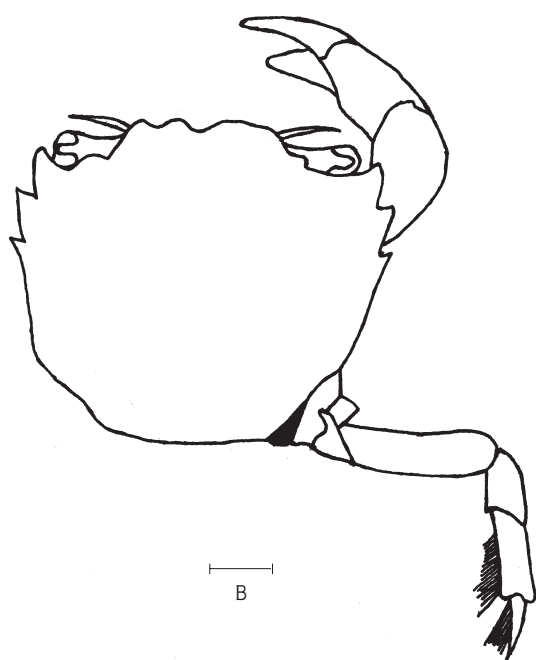


Figure 3. *Brachynotus sexdentatus*, dorsal view of carapace and first, fifth pereopods. Scale of B=1.14 mm

significant. Most of the Sinop coast specimens are males, and the measurements of the carapace size of the specimens are 27 and 36 mm on average.

This species has been reported in the Mediterranean Sea from French coasts (Bouvier, 8, as *Portunus depurator*), Iberian waters (Zariquiey Alvarez, 7, as *Macropipus depurator*) and French and European waters (Noël, 5, as *Liocarcinus depurator*). *Liocarcinus depurator* has been established before by Müller (9), Holthuis (4) and Balkis (6) from the Sea of Marmara coasts, by Kocataş (1) and Holthuis (4) from the Turkish Aegean Sea coasts; and by Holthuis (2, 4) and Kocataş (3) from the Turkish Mediterranean coasts.

The species has been recorded at depths between 10 and 250 meters, from the North Sea to the north-eastern Atlantic Ocean (10).

Specimens were collected at depths between 5 and 10 meters. This species has not been reported previously from the Black Sea coasts of Turkey.

#### *Brachynotus sexdentatus* (Risso, 1827)

Material examined: Black Sea: Station 41°55'N 35°6.5'E, depth 10 m, mud and sand, 22 July 1996, 1 specimen carapace length 27 mm and width 9 mm, figure 3.

This species is a common inhabitant of sandy shores, where it hides itself in the sand (11). In the description, diagnoses given by Zariquiey Alvarez (7), Noël (5) and Balkis (6) were observed.

Though in Balkis's (6) material the measurements of two specimens were 6 and 20 mm and 18 and 22 mm, the measurements of the carapace size of the single specimen in the present study are 5 and 9 mm.

*Brachynotus sexdentatus* has been determined before from the Turkish Seas (from the Sea of Marmara coastal waters by Balkis (6), and from the Turkish Mediterranean coasts by Geldiay & Kocataş, (12) and Froglija & Manning (11).

It has been recorded from the Mediterranean Sea, the Black Sea, the north Suez Canal and England (11). The specimen in the present study was found at a depth of 10 meters. This species has not been established previously from the Black Sea coasts of Turkey.

#### Discussion

Variations in decapod fauna have been observed in the Black Sea during the last 40 years, a consequence of the gradual diminishing of water salinity occasioned by huge quantities of freshwater (13). In addition, many organic and inorganic wastes eventually reach the sea (14, 15). As a result, a decrease in the number of species has been established. Most of the decapod species in the Black Sea originate in the Mediterranean and the Atlantic Ocean.

*Liocarcinus depurator* (Linnaeus, 1758), which is a known as a Mediterranean and Atlantic Ocean species, was reported from the first time by Holthuis (2) from Turkish Mediterranean shores. Later, it was reported by Kocataş (1) from the Aegean Sea coasts and the Mediterranean coasts of Turkey, by Müller (9) and Balkis (6) from the Sea of Marmara, and by Holthuis (4) from the Sea of Marmara, Turkish Aegean Sea shores and Turkish Mediterranean coasts, respectively.

However, this species has not been recorded by Holthuis (2, 4) or Kocataş (3) from Turkish Black Sea coasts. Moreover, Bacescu (16) and Gutu (17), who also collected decapods from the Romanian Black Sea coasts, have not found this species from the Romanian shores.

Recent studies on the decapod fauna of the Romanian Black Sea were performed by Petrescu and Balaşescu (13). They mentioned 26 species of decapods on the Romanian coasts. *Liocarcinus depurator* (Linnaeus, 1758) was not found in their study.

*Brachynotus sexdentatus* (Risso, 1827), which is a

Mediterranean species, has also been recorded initial by Geldiay and Kocataş (12) and by Froglija and Manning (11) from the Aegean coasts of Turkey. It has also been reported from the Sea of Marmara by Balkis (6).

*Brachynotus sexdentatus* (Risso, 1827) was reported for the first time by Bacescu (16) from the Romanian Black Sea coasts.

In the present study, *Liocarcinus depurator* (Linnaeus, 1758) and *Brachynotus sexdentatus* (Risso, 1827)

are recorded for the first time from the Turkish Black Sea coasts.

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