

## The Isopod Crustacea of Fethiye Bay, Levantine Sea, Turkey

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**Abstract.** Research surveys were conducted in a protection area between June and September 2008 along the coast of Fethiye Bay, Turkey. A total of 999 specimens of isopods belonging to 15 families and 41 species were captured at 82 localities with depths ranging between 0 and 30 m from various substrates. Of these, 25 species (*Cleantis prismatica*, *Astacilla longicornis*, *Apanthura corsica*, *Jaera hopeana*, *Janira maculosa*, *J. nordmanni*, *Bopyrus squillarum*, *Cirolana cranchii*, *Eurydice affinis*, *Cymodoce emarginata*, *C. hansenii*, *C. tuberculata*, *C. spinosa*, *Dynamene bifida*, *D. edwardsi*, *D. magnitorata*, *Ischyromene lacazei*, *Lekanesphaera monodi*, *Sphaeroma walkeri*, *Jeopopsis brevicornis littoralis*, *Limnoria lignorum*, *Paranthura nigropunctata*, *Synischia hectica*, *Stenosoma capito*, *Halophiloscia couchii*) were new records from the Levantine Sea coast of Turkey. The most abundant species found in Fethiye Bay were *Ligia italica*, *J. hopeana* and *J. maculosa*.

**Key words:** Isopod, Fethiye Bay, Levantine Sea, Turkey.

### Introduction

Fethiye Bay is located in the Levantine coast of Turkey. Because of its location, the bay is closely associated with the southern part of the Aegean Sea. It is part of the Fethiye-Göcek region, declared as special protection area in 1988.

Isopod crustaceans occupy various habitats, from the desert to the deep sea, with the exception of the terrestrial Antarctica. Marine isopods (those that breed in marine or estuarine habitats) have been reported from the supralittoral and intertidal zones and depths of up to six kilometers (Poore & Wilson 1993, Poore & Bruce 2012). Nevertheless, they are poorly studied along the Levantine Sea coast of Turkey and in Fethiye Bay. Two earlier scientific studies have included marine isopods of Fethiye Bay. One of them (Özgür 2004) reported five isopod species (*Gnathia vorax*, *Paranthura costana*, *Cymodoce truncata*, *Dynamene torelliae* and *Carpas stebbingi*), while the other study reported the alien species *Paradella diana* (Kirkim et al. 2015). The goal of the present study was to deepen the knowledge regarding the marine isopod fauna living in Fethiye Bay, Turkey.

### Materials and methods

Sampling was conducted between June and September 2008. A total of 83 stations were chosen for scuba diving (5–30 m) and snorkelling (0–5 m) in the bay (Fig. 1). The samples were collected from various zones (supralittoral, midlittoral, infralittoral) and biotopes (rocky, sandy and

muddy) with qualitative (dredging, scuba diving, snorkelling and hand picking) techniques (Fig. 1). Most of the specimens were collected by hand. In addition, samples were taken with a dredge in five locations. Normally dredging is not allowed in this protected area. However, this study has been carried out with special governmental permit. The samples were placed in separate jars and fixed with 4% formaldehyde solution. In the laboratory, they were washed with freshwater and sorted under the stereo microscope and preserved in 70% ethanol. Separated isopods were identified according to Kirkim (1998), Trilles (1968) and Bruce & Ellis (1983) and deposited at the Museum of Faculty of Fisheries, Ege University (ESFM), Turkey. Abbreviations used in text and figure captions; Station: Sts and St; ind: Individuals; D: Dredge; m: Meter.

### Results

A total of 999 isopod specimens belonging to 15 families and 41 species were collected and identified in the Fethiye Bay. The family Sphaeromatidae was represented by the highest number of species (14). Other families with high numbers of species were Janiridae (five species), Anthuridae (three species) and Cirolanidae (three species), respectively. Twenty-five species [*Cleantis prismatica* (Risso, 1826); *Astacilla longicornis* (Sowerby, 1806); *Apanthura corsica* Amar, 1953; *Jaera hopeana* Costa, 1853; *J. nordmanni* (Rathke, 1837); *Janira maculosa* Leach, 1814; *Bopyrus squillarum* Latreille, 1802; *Cirolana cranchii* Leach, 1818; *Eurydice affinis* Hansen, 1905; *Cymodoce emarginata* Leach, 1818; *C. hansenii* Dumay, 1972; *C. tuberculata* Costa in Hope, 1851;

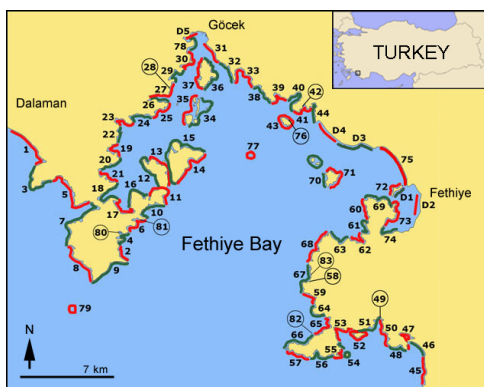


Figure 1. Map of the study area (numbers are scuba stations, D: dredge). The lines in different colors indicate only the difference between the stations.

*C. spinosa* (Risso, 1816); *Dynamene bifida* Torelli, 1930; *D. edwardsi* (Lucas, 1849); *D. magnitorata* Holdich, 1968; *Ischyromene lacazei* Racovitza, 1908; *Lekanesphaera monodi* (Arcangeli, 1934); *Sphaeroma walkeri* Stebbing, 1905; *Joeropsis brevicornis littoralis* Amar, 1949; *Limnoria lignorum* (Rathke, 1799); *Paranthura nigropunctata* (Lucas, 1846); *Synischia hectica* (Pallas, 1772) and *Stenosoma capito* (Rathke, 1837); *Halophiloscia couchi* (Kinahan, 1858)] were reported for the first time from the Levantine Sea coast of Turkey. With the presence of additional ten species: *Anilocra frontalis* H. Milne Edwards, 1840; *Anilocra physodes* (Linnaeus, 1758); *Anthura gracilis* (Montagu, 1808); *Cyathura carinata* (Krøyer, 1847); *Ianiropsis brevicornis* (Sars, 1883); *Eurydice pulchra* Leach, 1815; *Sphaeroma serratum* (Fabricius, 1787); *Gnathia dentata* (Sars, 1872); *Ligia italica* Fabricius, 1798 and *Limnoria tripunctata* Menzies, 1951, 35 species were new records for Fethiye Bay.

#### Family HOLOGNATHIDAE Thomson, 1904

##### *Cleantis prismatica* (Risso, 1826)

Material: Sts. D3, D4, 3-5 m, 2 ind. (the collection number is ESMFMAL/2008-2219)

Distribution: Atlantic Ocean, Mediterranean Sea including Spain (Castelló & Carballo 2001) and Sea of Marmara and Aegean coasts of Turkey (Bakır et al. 2014). First record from Levant coast of Turkey.

#### Family ARCTURIDAE Dana, 1849

##### *Astacilla longicornis* (Sowerby, 1806)

Material: Sts.60,78, rocky and sandy, 5-30 m, total 2 ind.

Distribution: Atlantic Ocean, Mediterranean Sea including France (Ledoyer 1962) and Aegean

Sea coast of Turkey (Kırkım 1998). First record from Levant coasts of Turkey.

#### Family CYMOTHOIDAE Leach, 1814

##### *Anilocra frontalis* H. Milne Edwards, 1840

Material: St.D4, 3-5 m, 1 ind. (the collection number is ESMFMAL/2008-2220)

Distribution: Atlantic Ocean, Mediterranean Sea including Italian (Argano & Campanaro 2010), Iberian Peninsula (Castelló & Carballo 2001), French coast (Trilles 1968), Black Sea coast of Turkey (Bakır et al. 2014) and Levantine coast of Turkey (Innal et al. 2007).

##### *Anilocra physodes* (Linnaeus, 1758)

Material: Sts.3, 78 rocky and sandy, 5-30 m, 3ind.; St.69, rocky, 0-5 m, 2 ind.

Distribution: Atlantic Ocean, Mediterranean Sea including Italy (Argano & Campanaro 2010), French coast (Trilles 1968), Greece (Boyko et al. 2008) and Levantine, Aegean Sea and Sea of Marmara coasts of Turkey (Bakır et al. 2014).

#### Family ANTHURIDAE Leach, 1818

##### *Anthura gracilis* (Montagu, 1808)

Material: St.21, rocky and sandy, 5-30 m, 2 ind.

Distribution: Atlantic Ocean (Castelló & Carballo 2001), Mediterranean Iberian Peninsula (Castelló & Carballo 2001), Aegean and Levantine Sea coasts of Turkey (Kırkım 1998, Mutlu & Ergev 2013) and Sea of Marmara (Bakır et al. 2014).

##### *Apanthura corsica* Amar, 1953

Material: Sts. 9, 20, 48, 51, 69, 78, rocky and sandy, 5-30 m, 13 ind.

Distribution: Mediterranean Sea including Tyrrhenian Sea (Wägele 1980) and Aegean coast of Turkey (Kırkım 1998). First record from Levant coasts of Turkey

##### *Cyathura carinata* (Krøyer, 1847)

Material: Sts.27, 72, rocky, 0-5 m, 3 ind.; St.78, rocky and sandy, 5-30 m, 1 ind.

Distribution: Atlantic Ocean (Castelló & Carballo 2001), Mediterranean Iberian Peninsula (Castelló & Carballo 2001), Black Sea, Aegean Sea and Levantine coasts of Turkey (Geldiay & Kocataş 1972a, Kocataş & Katakın 1983, Öztürk 1998, Bakır et al. 2014).

#### Family JANIRIDAE Sars, 1897

##### *Carpas stebbingi* (Monod, 1933)

Material: St.27, rocky, supralittoral, 2 ind., Sts.20, 22, 35, 36, 37, 41, rocky, 0-5 m, 16 ind.

Distribution: Atlantic Ocean (Castelló & Junoy 2007), Mediterranean Sea including Sea of Marmara, Aegean and Levantine coasts of Turkey (Geldiay & Kocataş 1972a, Özgür 2004, Yurdabak 2004, Bakır et al. 2014).

***Ianiropsis breviremis* (Sars, 1883)**

Material: Sts.35, 54, 70, rocky, 0-5 m, 5 ind.; Sts.12, 51, 78, rocky and sandy, 5-30 m, 6 ind.

Distribution: Atlantic Ocean (Kavanagh 2009), Mediterranean Pianosa Island, Italian (Bedini et al. 2014), Aegean, Sea of Marmara and Levantine coasts of Turkey (Kirkim 1998, Mutlu & Ergev 2013, Bakır et al. 2014).

***Jaera hopeana* Costa, 1853**

Material: Sts.12, 16, 19, 32, 35, 37, 41, 43, rocky, 0-5 m, 20 ind.

Distribution: Atlantic Ocean (Haahtala & Naylor 1965), Mediterranean Pianosa Island, Italy (Bedini et al. 2014), Aegean and Black Sea coasts of Turkey (Geldiay & Kocataş 1972a, Sezgin & Aydemir 2010, Bakır et al. 2014). First record from Levant coasts of Turkey.

***Jaera nordmanni* (Rathke, 1837)**

Material: St.30, rocky, 0-5 m, 2 ind.

Distribution: Atlantic Ocean (Castelló & Junoy 2007), Mediterranean Belaric Island (Jauma & Garcia 1988), Sea of Marmara, Black and Aegean Sea coasts of Turkey (Demir 1952, Geldiay & Kocataş 1972a, Veuille & Kocataş 1978, Bakır et al. 2014). First record from Levant coasts of Turkey.

***Janira maculosa* Leach, 1814**

Material: Sts.4, 7, 11, 13, 22-24, 27, 30-32, 34-37, 41, 43, 51, 70, 71, 78, rocky, 0-5 m, 46 ind., Sts.50, 69, 78, rocky and sandy, 5-30 m, 15 ind.

Distribution: Atlantic Ocean (Castelló & Carballo 2001), Mediterranean Iberian Peninsula (Castelló & Carballo 2001), Sea of Marmara, Aegean and Black Sea coasts of Turkey (Demir 1952, Geldiay & Kocataş 1972b, Gönügür- Demirci & Katakın 2004, Bakır et al. 2014). First record from Levant coasts of Turkey.

**Family BOPYRIDAE Rafinesque, 1815*****Bopyrus squillarum* Latreille, 1802**

Material: Sts.24, 25, 73, rocky, 0-5 m, 7 ind., St.78, rocky and sandy, 5-30 m, 2 ind.

Distribution: Atlantic Ocean (Holthuis 1949), Mediterranean including Sea of Marmara and Aegean coast of Turkey (Demir 1952, Geldiay & Kocataş 1972b). First record from Levant coasts of Turkey.

**Family CIROLANIDAE*****Cirolana cranchi* Leach, 1818**

Material: St.23, rocky, 0-5 m, 3 ind., St.29, rocky and sandy, 5-30 m, 3 ind.

Distribution: Atlantic Ocean (Castelló & Carballo 2001), Australia (Bruce & Ellis 1983), Mediterranean Sea including Iberian Peninsula (Spain) (Castelló & Carballo 2001), Italian (Argano &

Campanaro 2010) and Aegean coasts of Turkey (Kirkim 1998). First record from Levant coasts of Turkey.

***Eurydice affinis* Hansen, 1905**

Material: St.40, rocky and sandy, 5-30 m, 1 ind.

Distribution: Atlantic Ocean (Kirkim 1998), Mediterranean Sea including Italian (Argano & Campanaro 2010) and Aegean coasts of Turkey (Kirkim 1998). First record from Levant coasts of Turkey.

***Eurydice pulchra* Leach, 1815**

Material: Sts.40, 68, 78, rocky and sandy, 5-30 m, 4 ind.

Distribution: Atlantic Ocean (Wolff 1966), Mediterranean Sea including Black Sea, Aegean Sea and Levantine Sea coasts of Turkey (Kirkim 1998, Mutlu & Ergev 2008, Ersoy-Karaçuha et al. 2009).

**Family SPHAEROMATIDAE*****Cymodoce emarginata* Leach, 1818**

Material: St.38, rocky, 0-5 m, 4 ind.

Distribution: Atlantic Ocean (Castelló & Carballo 2001), Mediterranean Sea including Balearic Islands, Iberian Peninsula (Castelló & Carballo 2001), Sea of Marmara and Aegean Sea coast of Turkey (Sowinsky 1897, Geldiay & Kocataş 1972a). First record from Levant coasts of Turkey.

***Cymodoce hanseni* Dumay, 1972**

Material: Sts.20, 35, 47, 51, rocky, 0-5 m, 6 ind., St.31, rocky and sandy, 5-30 m, 2 ind.

Distribution: Mediterranean Sea including Italian (Argano & Campanaro, 2010), France, Greece and Aegean coast of Turkey (Kirkim 1998). First record from Levant coasts of Turkey.

***Cymodoce truncata* Leach, 1814**

Material: Sts.3, 8, 10, 16, 39, 45, 51, rocky, 0-5 m, 13 ind., Sts.19, rocky and sandy, 5-30 m, 2 ind.

Distribution: Atlantic Ocean (Castelló & Carballo 2001), Mediterranean Sea including Italian (Argano & Campanaro, 2010), Balearic Islands, Iberian Peninsula (Castelló & Carballo 2001), Aegean and Levantine Sea coasts of Turkey (Kocataş 1976, Özgür 2004).

***Cymodoce tuberculata* Costa in Hope, 1851**

Material: St.22, rocky, 0-5 m, 1 ind.

Distribution: Mediterranean Sea including Italian (Argano & Campanaro 2010), Greece, Sea of Marmara and Aegean coast of Turkey (Kirkim 1998, Bakır et al. 2014). First record from Levant coasts of Turkey.

***Cymodoce spinosa* (Risso, 1816)**

Material: Sts.48, 51, rocky, 0-5 m, 2 ind., Sts.51, 60, 78, rocky and sandy, 5-30 m, 4 ind.

Distribution: Atlantic Ocean (Boyko et al. 2008), Mediterranean Sea including Italian (Argano & Campanaro 2010), Greece, and Aegean coast of Turkey (Geldiay & Koçataş 1972a). First record from Levant coasts of Turkey.

***Dynamene bifida* Torelli, 1930**

Material: Sts.38, 59, rocky, 0-5 m, 4 ind., St.78, rocky and sandy, 5-30 m, 1 ind.

Distribution: Atlantic Ocean (Holdich 1970), Mediterranean Sea including Italian, Greece and France (Holdich 1970), and Aegean coast of Turkey (Kırkırm 1998). First record from Levant coasts of Turkey.

***Dynamene edwardsi* (Lucas, 1849)**

Material: Sts.3, 20, 50, 51, 59, 66, rocky, 0-5 m, 6 ind., Sts.60, 71, 78, rocky and sandy, 5-30 m, 6 ind.

Distribution: Atlantic Ocean (Castelló & Carballo 2001), Mediterranean Sea including Italian (Argano & Campanaro 2010), Greece, France (Holdich 1970), Balearic Islands, Iberian Peninsula (Castelló & Carballo 2001) and Aegean coast of Turkey (Geldiay & Koçataş 1972a). First record from Levant coasts of Turkey.

***Dynamene magnitorata* Holdich, 1968**

Material: Sts.2, 10, 13, 14, 33, rocky, 0-5 m, 10 ind., St.22, rocky and sandy, 5-30 m, 3 ind.

Distribution: Atlantic Ocean (Castelló & Carballo 2001), Mediterranean Sea including Tunisia, France (Holdich 1970), Balearic Islands, Iberian Peninsula (Castelló & Carballo 2001) and Aegean coast of Turkey (Geldiay & Koçataş 1972a, Koçataş 1976). First record from Levant coasts of Turkey.

***Dynamene torelliae* Holdich, 1968**

Material: Sts.7, 8, 9, 16, 22, 23, 38, 39, 45, 46, 51, 54, 71, rocky, 0-5 m, 26 ind., Sts.10, 12, 14, 60, 78, rocky and sandy, 5-30 m, 15 ind.

Distribution: Atlantic Ocean (Holdich 1970), Mediterranean Sea including Greece, Tunisia, France (Holdich 1970) and Sea of Marmara, Black Sea, Aegean and Levantine Sea coasts of Turkey (Özgür 2004, Bakır et al. 2014).

***Ischyromene lacazei* Racovitza, 1908**

Material: St.24, rocky, 0-5 m, 2 ind., St.36, rocky and sandy, 5-30 m, 2 ind.

Distribution: Atlantic Ocean (Castelló & Carballo 2001), Mediterranean Sea including France, Morocco, Egypt, (Schüller & Wägele 2005), Balearic Islands, Iberian Peninsula (Castelló & Carballo 2001) and Aegean coast of Turkey (Kırkırm 1998). First record from Levant coasts of Turkey.

***Paradella diana* (Menzies, 1962)**

Material: St.38, rocky, 0-5 m, 1 ind. (the collection number is ESMFMAL/2008-2218)

Distribution: Pacific and Atlantic Oceans, the coasts of Australia and Arabian Sea (Menzies & Glynn 1968), Mediterranean Sea including Italian (Forniz & Maggiore 1985), Cyprus (Kırkırm et al. 2010), Libya (Zgozi et al. 2002), Tunisia (Bey et al. 2001), Egypt (Atta 1987), Spain (Castelló & Carballo 2001), Aegean and Levantine coasts of Turkey (Çınar et al. 2008, Kırkırm et al. 2015).

***Lekanesphaera monodi* (Arcangeli, 1934)**

Material: Sts.34, 36, 38, 39, 41, rocky, 0-5 m, 15 ind.

Distribution: Atlantic Ocean (Menzies & Glynn 1968), Mediterranean Sea including Italian (Argano & Campanaro 2010), Spain (Junoy & Castelló 2003), Black Sea and Aegean Sea coasts of Turkey (Bakır et al. 2014). First record from Levant coasts of Turkey.

***Sphaeroma walkeri* Stebbing, 1905**

Material: St.73, rocky, 0-5 m, 2 ind., St.78, rocky and sandy, 5-30 m, 2 ind.

Distribution: This species is found worldwide (Jacobs 1987). Indian Ocean and Red Sea (Jacobs 1987, Galil 2008), Atlantic Ocean including Morocco and Mozambique (Jacobs 1987), Mediterranean Sea including Egypt (Jacobs 1987), Spain (Jacobs 1987), France, Tunisia, the Suez Canal, Israel (Galil 2008) and Aegean coasts of Turkey (Kırkırm 1998). First record from Levant coasts of Turkey.

***Sphaeroma serratum* (Fabricius, 1787)**

Material: St.12, 16, 17, 18, 19, 23, 24, 25, 27, 29, 30, 31, 32, 34, 35, 37, 41, 43, 69, 72, 73, rocky, 0-5 m, 61 ind., St.78, rocky and sandy, 5-30 m, 10 ind.

Distribution: Atlantic Ocean (Castelló & Carballo 2001), Mediterranean Sea including Italian (Argano & Campanaro 2010), Egypt, France, Spain (Castelló & Carballo 2001), Tunisia, the Suez Canal, Israel (Galil 2008), Sea of Marmara, Black Sea, Aegean Sea and Levantine Sea coasts of Turkey (Bakır et al. 2014).

**Family GNATHIIDAE**

***Gnathia dentata* (Sars, 1872)**

Material: St.43, rocky and sandy, 5-30 m, 2 ind.

Distribution: Atlantic Ocean (Junoy & Castelló 2003), Mediterranean Sea including Cyprus (Kırkırm et al. 2010) and Levantine Sea coast of Turkey (Bakır et al. 2014).

***Gnathia vorax* (Lucas, 1849)**

Material: Sts.9, 16, 30, 37, 47, 51, rocky, 0-5 m, 11 ind., Sts.37, 51, 53, 78, rocky and sandy, 5-30 m, 7 ind.

Distribution: Atlantic Ocean (Junoy & Castelló 2003), Mediterranean Sea including Italian (Argano & Campanaro 2010), Spain (Castelló & Car-

ballo 2001), Greece (Chryssanthi 2004), Sea of Marmara, Black Sea, Aegean Sea, Levantine Sea coasts of Turkey (Kirkim 1998, Özgür 2004, Bakır et al. 2014).

#### Family JOEROPSIDIDAE

##### *Joeropsis brevicornis littoralis* Amar, 1949

Material: St.31, rocky, 0-5 m, 4 ind.

Distribution: Atlantic Ocean (Junoy & Castelló 2003), Mediterranean Sea including Spain (Castelló & Carballo 2001), Greece, Sea of Marmara and Aegean coast of Turkey (Kirkim, 1998, Bakır et al. 2014). First record from Levant coasts of Turkey.

#### Family LIGIIDAE

##### *Ligia italica* Fabricius, 1798

Material: Sts. 3, 5-7, 9-17, 19-25, 27, 29-34, 36-38, 40, 41, 43-48, 50-57, 59-61, 63-70, rocky supralittoral, 589 ind., St.51, 54 rocky, 0-5 m, 13 ind., St.44, rocky and sandy, 5-30 m, 3 ind.

*L. italica* a terrestrial species that can be found in the supralittoral zone. Distribution: Atlantic Ocean (Boyko et al. 2008), Mediterranean Sea including Spain (Junoy & Castelló 2003), Italian and Greece (Boyko et al. 2008), Sea of Marmara, Black Sea, Aegean Sea and Levantine Sea coasts of Turkey (Bakır et al. 2014).

#### Family LIMNORIIDAE

##### *Limnoria lignorum* (Rathke, 1799)

Material: St.51, 29, rocky, 0-5 m, 3 ind., St.15, 50, rocky and sandy, 5-30 m, 4 ind.

Distribution: Atlantic Ocean (Borges & Costa 2014), Mediterranean Sea including Italian (Argano & Campanaro 2010), Spain (Junoy & Castelló 2003), Sea of Marmara (Demir 1952). *L. lignorum* is recorded for the first time from the Levant coasts of Turkey. First record from Levant coasts of Turkey.

##### *Limnoria tripunctata* Menzies, 1951

Material: St.22, 36, rocky, 0-5 m, 4 ind.

Distribution: Atlantic Ocean (Borges et al. 2014), Mediterranean Sea including Italian (Argano & Campanaro 2010), Libya (Abushaala et al. 2014), Aegean and Levantine Sea coasts of Turkey (Kirkim 1998, Bakır et al. 2014).

#### Family PARANTHURIDAE

##### *Paranthura costana* Spence Bate & Westwood, 1866

Material: St.13, rocky, 0-5 m, 2 ind.

Distribution: Atlantic Ocean (Castelló & Carballo 2001), Mediterranean Sea including Italian (Argano & Campanaro 2010), Spain (Castelló & Junoy 2007), Aegean and Levantine Sea coasts of Turkey (Geldiay & Kocataş 1972a, Özgür 2004).

##### *Paranthura nigropunctata* (Lucas, 1846)

Material: St.35, rocky, 0-5m, 3 ind., St.31, rocky and sandy, 5-30m, 4 ind.

Distribution: Atlantic Ocean (Castelló & Carballo 2001), Mediterranean Sea including Italian (Argano & Campanaro 2010), Spain (Castelló & Junoy 2007), Aegean Sea (Kocataş 1976). First record from Levant coasts of Turkey.

#### Family IDOTEIDAE

##### *Synischia hectica* (Pallas, 1772)

Material: St. D4, 3-5 m depth, 1 ind.

Distribution: The North Atlantic Ocean (Junoy & Castelló 2003), Mediterranean Sea including Italian (Argano & Campanaro 2010), Spain (Junoy & Castelló 2003), Sea of Marmara (Demir 1952) and Aegean Sea (Geldiay & Kocataş 1972a). First record from Levant coasts of Turkey.

##### *Stenosoma capito* (Rathke, 1837)

Material: St.45, 51, rocky, 0-5 m, 2 ind., St.3, 5, rocky and sandy, 5-30 m, 7 ind.

Distribution: The North Atlantic Ocean (Junoy & Castelló 2003), Mediterranean Sea including Italian (Argano & Campanaro 2010), Spain (Junoy & Castelló 2003), Sea of Marmara, Black and Aegean Sea coasts of Turkey (Bakır et al. 2014). First record from Levant coasts of Turkey.

#### Family HALOPHILOSCIIDAE

##### *Halophiloscia couchii* (Kinahan, 1858)

Material: St.24, rocky, 0-5 m, 3 ind.

Distribution: Atlantic Ocean and introduced to North and South America, Hawaii and Australia (Bidegaray-Batista et al. 2015), Mediterranean Sea including Italian (Argano & Campanaro 2010), Spain (Junoy & Castelló 2003), Sea of Marmara, Black Sea and Aegean Sea coasts of Turkey (Bakır et al. 2014). First record from Levant coasts of Turkey.

#### Discussion

In this study, 41 species were reported from Fethiye Bay, 14 species belong to Sphaeromatidae, five to Janiridae, three to Anthuridae and Cirolanidae, while the other families were represented by one or two species. Forty species were new records for Fethiye Bay and 25 species were reported for the first time from the Levantine Sea coast of Turkey. The most abundant species found in the study area were *L. italica*, *J. hopeana* and *J. maculosa*.

Previous studies which contain isopod species indicate 82 species on Turkish coasts and 28 species on the Levantine coast (Özgür 2004, Bakır et

al. 2014, Kırkım et al. 2015). Besides these, six species (*G. vorax*, *P. costana*, *C. truncata*, *D. torelliae*, *C. Stebbingi* and *P. diana*) were also reported from Fethiye Bay (Özgür 2004, Kırkım et al. 2015). There are only two studies on isopods conducted following the designation of the protected area. One is study (Özgür 2004) and the other (Kırkım et al. 2015), whose samples are in the Museum of the Faculty of Fisheries, Ege University, Bornova-Izmir (the collection number is ESMFMAL/2008-2218). Therein, *P. diana* was known as an exotic species (Kırkım et al. 2015).

*P. diana* was first recorded on the Italian coast (Forniz and Maggiore 1985). It has rather wide distribution throughout the North American Pacific and Atlantic coasts, Australia, Arabian Sea, and Mediterranean Sea. The species has entered the Mediterranean Sea on marine vessels as a fouling organism (Galil et al. 2008, Occhipinti-Ambrogi et al. 2011). Also, *S. walkeri* has entered the Mediterranean Sea by shipping or Suez Canal. The species is commonly found in intertidal fouling communities and has been widely reported from ports in warm and warm-temperate waters worldwide (Galil 2008). A continuous monitoring of the isopod community in the area is important in order to detect changes in species composition, monitor the appearance of exotic species, evaluate the effect of invasive species on the native ones, and determine extinction risks. In conclusion, as a result of our study, the number of Isopoda species known to occur on the Levantine Sea coast of Turkey has increased to 53.

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