Turk J Zool
24 (2000) 375-384
@ TÜBİTAK

A Preliminary Study on the Ostracoda (Crustacea) Fauna of Lake Beyşehir

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Received: 07.12.1999

Abstract: The material was collected in July and September 1997 from 15 stations on Lake Beyşehir. A total of 15 species (*Ilyocypris biplicata, Ilyocypris gibba, Ilyocypris bradyi, Candona neglecta, Pseudocandona compressa, Prionocypris zenkeri, Eucypris virens, Heterocypris rotundata, Heterocypris incongruens, Cypria ophtalmica, Physocypria kraepelini, Cypridopsis vidua, Potamocypris zschokkei, Psychrodromus olivaceus, Darwinula stevensoni*) belonging to 12 genera were determined. Of these, *Heterocypris rotundata* is new addition to the Ostracoda fauna of Turkey.

Key Words: Freshwater, Ostracoda, Taxonomy, Lake Beyşehir, Turkey

Beyşehir Gölü'nün Ostracoda (Crustacea) Faunası Üzerine Bir Ön Çalışma

Özet: Materyal Beyşehir Gölü'nden 1997 yılının Temmuz ve Eylül aylarında 15 istasyondan toplanmıştır. 12 cinse ait toplam 15 tür (*Ilyocypris biplicata, Ilyocypris gibba, Ilyocypris bradyi, Candona neglecta, Pseudocandona compressa, Prionocypris zenkeri, Eucypris virens, Heterocypris rotundata, Heterocypris incongruens, Cypria ophtalmica, Physocypria kraepelini, Cypridopsis vidua, Potamocypris zschokkei, Psychrodromus olivaceus, Darwinula stevensoni*) saptanmıştır. Bunlardan, *Heterocypris rotundata* Türkiye Ostracoda faunasına yeni ilavedir.

Anahtar Sözcükler : Tatlısu, Ostracoda, Taksonomi, Beyşehir Gölü, Türkiye

Introduction

Anatolia, a land bridge between Asia and Europe, has an important position zoogeographically, ecologically and geologically.

Anatolia has faced many geological changes, and the fauna of the region has considerable variation. During these changes, many animal species which originated in other zoogeographical regions migrated to Anatolia, particularly during the last glacial period, when conditions were appropriate for these species in Anatolia.

Many paleontological and zoological findings in Anatolia have confirmed the theory that the climate was suitable for many life forms during the last Ice Age. Nevertheless, taxonomic studies on the fauna of Anatolia are limited to a few groups of invertebrates.

Recent extensive studies on certain animal groups such as the subclass Ostracoda provide valuable information about Anatolia. The first studies on the Ostracoda fauna of Anatolia were conducted by Schäfer (1), Löffler (2) and Hartmann (3), followed by Gülen (4-9); Altınsaçlı and Kubanç (10), Altınsaçlı (11,12), Külköylüoğlu et al. (13,14); Altınsaçlı and Yılmam (15) and Külköylüoğlu (16). These researchers have determined the freshwater Ostracoda fauna of Anatolia (Asia Minor) and Thrace.

Our study contributes to the knowledge of recent cypridid ostracod fauna of Anatolia, and is a basis for reflection on the biogeography of this group in Anatolia and adjacent areas.

Study Area:

According to Yarar and Magnin (17), Lake Beyşehir is Turkey's largest freshwater lake (maximum depth 10 m) (Figure 1), and is a tectonic and oligotrophic lake. It is located about 75 km west of Konya province at an elevation of 1123 m (37°45'N-31° 36'E). In the west and

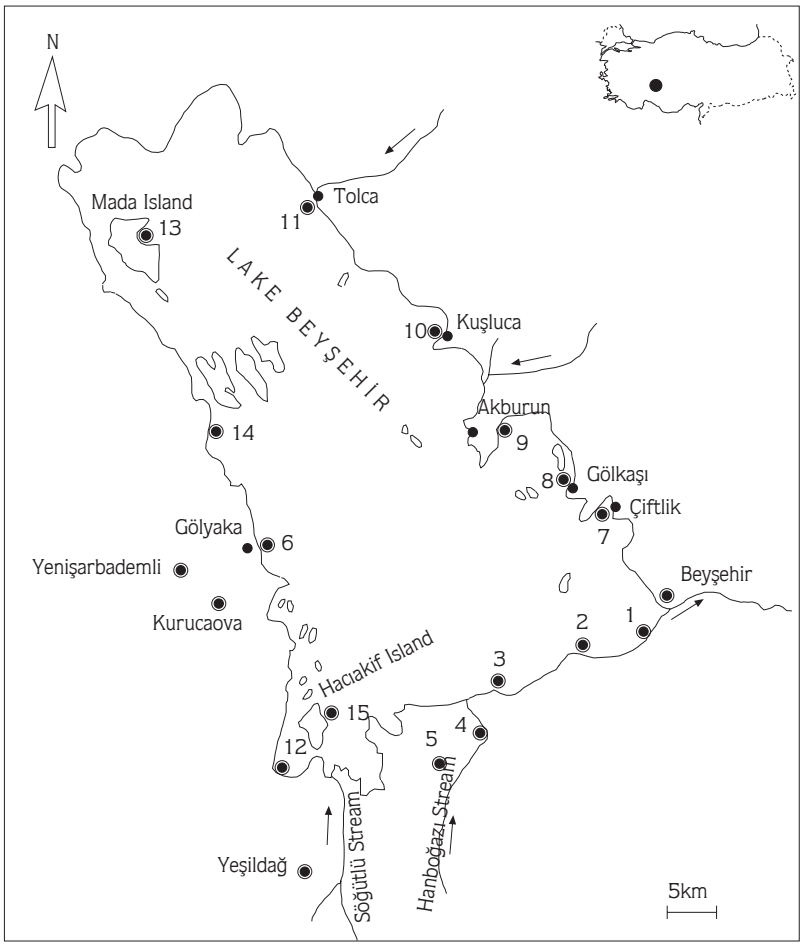


Figure 1. Lake Beyşehir and stations.

south, it is bordered by mountains, and the lower parts of the maquis-covered slopes are occupied by small areas of arable land and orchards. At the north of the lake are indigenous cedar (*Cedrus libani*) forests. On the eastern side of the lake the land is flat and mainly used for cultivation. There are 30 islands in the lake, of which the 3 largest are inhabited and farmed. Extensive reedbeds (*Phragmites* sp. and *Typha* sp.) are found only in bays in the east and south-west parts. The largest swamp areas are located in the south-west part of the lake and also around Yeşildağ village. Here, marshes cover a total area of 250 hectares (17). Normally, Beyşehir lake receives 450 hm^3 of water. Annually, as a result of low precipitation in recent years, natural evaporation and possible leakage through faults, and, in particular increasing water extraction, the water level has fallen considerably and the lake has been reduced to ca 55,000 ha. Several times it has even fallen below 1120 m. The lake is fed by 27 streams mainly coming from the Anamas (or Dedegöl) mountains in the west and the Sultan mountains in the east, and by a number of springs. The water level fluctuates between 1121 and 1125 m with a surface area of between 60,000 and 73,000 hectares. The natural outlet of the lake of is in the south-east where water formerly flowed via the Beyşehir stream into Suğla lake, 40 km south-east of Beyşehir. This stream is being directed to Apa dam and Çumra plain in the east by a project beginning in the year 2000. The catchment area of the lake is 4052 km^2. Although reed-cutting is practised in some places, the most important asset of the lake for local villagers is its fish production. The stations visited for samples are shown in Figure 1.

Stations:

Station-1: Lakeshore, Cemeller Village.

Station-2: Lakeshore, at 8 kilometers from Beyşehir to Akseki.

Station-3: Lakeshore, front of Dilayla Motel.

Station-4: Hanboğazı Stream at the junction between Yeşildağ Village and Akseki Town.

Station-5: Spring of Karahasan Atlı, Yeşildağ Village.

Station-6: Lakeshore, Gölyaka Village (Front of Historical Kubadabad Palace).

Station-7: Lakeshore, Çiftlik Village.

Station-8: Lakeshore, front of Water Pump Station in Gölkaşı Village.

Station-9: Lakeshore, Akburun Village.

Station-10: Lakeshore, Kuşluca Village.

Station-11: Lakeshore, Tolca Village.

Station-12: Lakeshore, near the road between Yeşildağ Village with Kurucaova Village.

Station-13: Lakeshore, Mada Island in Lake Beyşehir.

Station-14: Lakeshore, at 13 km from Gölyaka Village to Şarkikaraağaç Town.

Station-15: Lakeshore, Hacıakif Island in the lake Beyşehir.

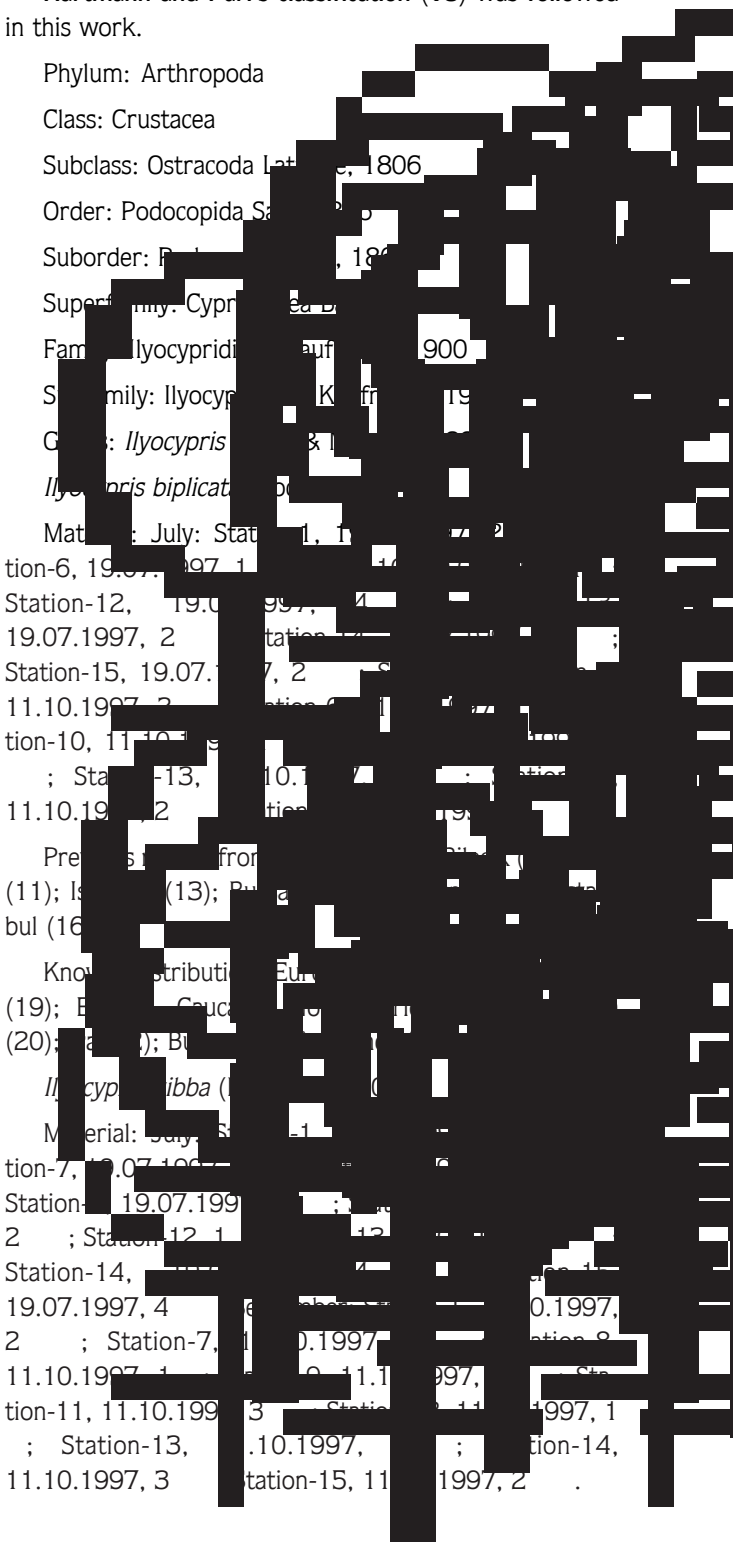
Materials and Methods

The material was collected in July and September 1997. Freshwater ostracods are found in stagnant and shallow shores. Therefore, the material was collected from lake and stream water. In order to collect living forms from the mud, a deep sample container (Ekman grab) was used.

Ostracods were collected from shallow water (< 1m depth) with a Müller plankton net, and fixed in 4% formaldehyde soon after collection. In the laboratory, the samples were washed with pressurised tap water, filtered through 3 standard-sized sieves (2, 1 and 0.25 mm mesh size, respectively) and stored in 70% ethanol. Then, the samples were preserved in 70% ethanol and glycerine (1:1 ratio). Species identification was made on the basis the soft body parts and valves. Samples were analysed in the laboratory between 1 and 35 days after. In addition, physical parameters such as salinity and dissolved oxygen were recorded at each station. Salinity and dissolved oxygen values measured by the Mohr-Knudsen and Winkler methods respectively. Other variables (pH, temperature) were measured in situ. Sampling stations and measured parameters (salinity and dissolved oxygen) are shown in Table 1. All material is deposited in the Zoology Museum, Department of Biology, Faculty of Science, University of Istanbul.

Findings and Taxonomy

Hartmann and Puri's classification (18) was followed in this work.



Phylum: Arthropoda

Class: Crustacea

Subclass: Ostracoda Lat[illegible], 1806

Order: Podocopida Sa[illegible]

Suborder: P[illegible], 18[illegible]

Superfamily: Cypr[illegible]ea B[illegible]

Fam[illegible]lyocypridi[illegible]auf[illegible]900

S[illegible]mily: Ilyocyp[illegible] K[illegible]ff[illegible]19[illegible]

G[illegible]: *Ilyocypris* [illegible]& [illegible]

Ily[illegible]pris biplicat[illegible]

Mat[illegible]: July: Stat[illegible]1, 1[illegible]2 tion-6, 19.07.1997, 1[illegible] Station-12, 19.07.1997, [illegible] 19.07.1997, 2 [illegible]tation[illegible]; Station-15, 19.07.1997, 2 [illegible] 11.10.1997, 3 [illegible] tion-10, 11.10.1997, [illegible] ; Sta[illegible]-13, 11.10.1997, [illegible] 11.10.1997, 2 [illegible]tion[illegible]

Pre[illegible]s [illegible]from[illegible] (11); Is[illegible](13); B[illegible] bul (16[illegible]

Know[illegible]stributi[illegible]Bu[illegible] (19); B[illegible]Cauc[illegible] (20); [illegible]); Bu[illegible]

Il[illegible]cyp[illegible]ibba ([illegible]

M[illegible]erial: July: S[illegible]-1[illegible] tion-7, 19.07.199[illegible] Station-[illegible] 19.07.1997; [illegible] 2 ; Station-12, 1[illegible]13[illegible] Station-14, [illegible]tion-1[illegible] 19.07.1997, 4 [illegible]0.1997, 2 ; Station-7, [illegible]0.1997[illegible]tion-8, 11.10.1997, 1[illegible]9, 11.10.1997, [illegible]Sta[illegible] tion-11, 11.10.1997, 3 [illegible]Statio[illegible]11[illegible]1997, 1 ; Station-13, [illegible].10.1997, [illegible]; [illegible]tion-14, 11.10.1997, 3 [illegible]tation-15, 11[illegible]1997, 2 [illegible].

Table 1. Sampling stations and determined parameters.

Stations	Co-ordinates N/E	Salinity (‰ S)		Temperature (°C)		pH		Dissolved Oxygen (mgl^{-1})	
		Summer	Autumn	Summer	Autumn	Summer	Autumn	Summer	Autumn
1	37°41'57"N								
	31°42'30"E	0.78	0.69	23	13	7.5	7.1	9.95	11.98
2	37°39'25"N								
	31°40'40"E	0.78	0.69	23	13	7.5	7.1	9.95	11.98
3	37°39'37"N								
	31°36'10"E	0.78	0.69	23	13	7.5	7.1	9.95	11.98
4	37°37'28"N								
	31°35'30"E	0.78	0.69	23	13	7.5	7.1	9.95	11.98
5	37°32'34"N								
	31°30'16"E	0.78	0.69	23	13	7.5	7.1	9.95	11.98
6	37°43'25"N								
	31°26'30"E	0.78	0.69	23	13	7.5	7.1	9.95	11.98
7	37°45'10"N								
	31°41'30"E	0.78	0.69	23	13	7.5	7.1	9.95	11.98
8	37°39'10"N								
	31°44'30"E	0.78	0.69	23	13	7.5	7.1	9.95	11.98
9	37°46'20"N								
	31°37'00"E	0.78	0.69	23	13	7.5	7.1	9.95	11.98
10	37°50'00"N								
	31°35'01"E	0.78	0.69	23	13	7.5	7.1	9.95	11.98
11	37°55'02"N								
	31°35'00"E	0.78	0.69	23	13	7.5	7.1	9.95	11.98
12	37°26'44"N								
	31°35'58"E	0.78	0.69	23	13	7.5	7.1	9.95	11.98
13	37°54'20"N								
	31°21'58"E	0.78	0.69	23	15	7.5	7.1	9.95	11.98
14	37°48'35"N								
	31°19'38"E	0.78	0.69	23	13	7.5	7.1	9.95	11.98
15	37°38'41"N								
	31°24'40"E	0.78	0.69	[illegible]	13	[illegible]5	7.1	9.95	11.98

Previous record from Turkey: Zongu[illegible], Kocael[illegible]; Izmir (4); Kütahya, Izmir (5); Balıkesir[illegible]; Adana[illegible]; Izmir (11); Balıkesir (10); Adapazarı, Izm[illegible]12); Istanb[illegible] (16).

Known Distribution: Europe, North A[illegible]n, North America (23); Iran (2); Bulgaria (21); Aegean Se[illegible]; Belgium (25); Luxembourg (26); France (22, 27); Polan[illegible] (28); Wales (29).

Ilyocypris bradyi Sars, 1890

Material: July: Station-8, 19.07.1997, 2 [illegible]. Se[illegible] tember: Station-8, 11.10.1997, 2 [illegible].

Prev[illegible] record[illegible]m Turkey: Eskişehir (5), Bilecik (7), Izm[illegible]1); Balı[illegible] (10); Istanbul (13); Bursa, Adapazarı; [illegible] (12).

K[illegible]n Distr[illegible]ution: Sweden, Britain, Germany, [illegible] Hungary, Turkestan (19); Europe, North [illegible]rica, Central Asia, and North America (23); Iran (2); Iran [illegible] Bulgaria (21); Germany (30); Luxembourg (26); Franc[illegible]22, 27); Wales (29).

[illegible]y: Candonidae Kaufmann, 1900

S[illegible]mily: Candoninae Kaufmann, 1900

[redacted]

Previous record from Turkey: Istanbul (15)

Known Distribution: Sweden, England, Germany, Czechoslovakia (19); North and South Europe, Siberia (23); France (22).

Subfamily: Cyclocypridinae Kaufmann, 1900

Genus: *Physocypria* (Vavra, 1897)

Physocypria kraepelini G. W. Müller, 1903

[redacted]

Previous record from Turkey: Istanbul (4); Kütahya, Izmir (5); Istanbul, Aydın, Muğla, Manisa, Afyon, Zonguldak (7); Mersin, Adana, Antakya (9); Istanbul (13); Bursa, Adapazarı, Izmit (12); Istanbul (16).

Known Distribution: North and South Eu[redacted], Alger[redacted] Azores, North America (35); Europe, No[redacted] Ame[redacted], Greenland (19); Northern Africa (42); Ca[redacted]sia, Ce[redacted]l Asia, Iran, Europe (20); Iberian Peninsula[redacted]3, 44, [redacted] Afghanistan, Iran (3); Bulgaria (21); Ib[redacted]n Penins[redacted] (46, 47); Soviet Union (48); Iberian Pen[redacted]la (49, 5[redacted] 51); Luxembourg (26); France (22); Polan[redacted]); Wales (29); Spain (52).

Subfamily: Cyprinotinae Bronstein[redacted]

Genus: *Heterocypris* C[redacted] 1892[redacted]

Heterocypris incong[redacted]ens (Ram[redacted]r, 1808)[redacted]

Material: July: St[redacted]on-5, 19.0[redacted]997, 20 [redacted] tember: Station-5, 1[redacted]10.1997, 3[redacted].

Previous record [redacted]om Turkey: E[redacted]ehir, Izm[redacted] Antalya, Denizli, Aydı[redacted] Muğla, Af[redacted] Ispart[redacted] Bolu[redacted] Zonguldak (7); Mersin,[redacted]dana (9); Izm[redacted] (10); Sinop (53); Istanbul[redacted]

Previous record from Turkey: C[redacted]mopolitan.

Heterocypris rotundata (Bronste[redacted] 1928)[redacted]

Material: July: Station[redacted] 10, 19.07.1999; numerous ; S[redacted]te[redacted]r: St[redacted], 11.10.1997, 1 ; Station-10, 11.1[redacted]19[redacted] 30

Previous record from Turkey: Ne[redacted] s[redacted]s for Tu[redacted]

Known Distribution: Northern Caucas[redacted]d Geor[redacted] (20)

Subfamily: Herpetocypridinae Kaufmann, 190[redacted]

Genus: *Psychrodromus* Danielopol & McKenzi[redacted] 1977

Psychrodromus olivaceus (Brady & Norman, 1884)[redacted]

Material: July: Station-2, 19.07.1997, 6 ; Se[redacted] tember: Station-2, 11.10.1997, 2 .

Previous record from Turkey: Antakya (3); Antak[redacted] (5); Izmir, Kütahya, Bilecik, Muğla, Bursa, Bolu (7); Izmir (11); Istanbul (13); Bursa, Adapazarı and Izmit (12).

Known Distribution: Europe (35); Britain, Hungary, Czechoslovakia and Switzerland (19); North and Central Germany (23); Europe and Caucasia (20); Yugoslavia (42); Bulgaria (21); Rumania (54); Luxembourg (26); France (22, 27); Wales (29).

Subfamily: Cypridopsinae Bronstein, 1947

Genus: *Cypridopsis* Brady, 1867

Cypridopsis vidua (O.F. Müller, 1776)

Ma[redacted] tion-6, 1[redacted]1997[redacted] ; Sta[redacted]9, [redacted]97; [redacted] 19.07.19[redacted] Station-1[redacted] 19[redacted] 19.07.[redacted]7; 4 [redacted] ptem[redacted] S[redacted] 1, [redacted]10.1997, [redacted] 1997[redacted] Statio[redacted] 11.10[redacted]997[redacted] 11.[redacted]1997, [redacted] 1[redacted].1997, [redacted] [redacted]ion-14, 1[redacted].1997 ; [redacted], 11.10[redacted]7, 4 .

[redacted]us recor[redacted] Turkey: Eskişehir (5[redacted] da[redacted]d, Ista[redacted]ul, [redacted]u, Zonguldak, [redacted]areli (7[redacted] [redacted]akkale, Balık[redacted]ir [redacted] Bursa, Adapaza[redacted]zmit [redacted]; [redacted] (53)[redacted]bul[redacted]).

[redacted]own Distribu[redacted]: North and Centr[redacted]urope, N[redacted] a[redacted]rica, Azores (35); Nort[redacted]d East A[redacted] [redacted]Yugoslavia (40, 55); Bulga[redacted](21); Ge[redacted] [redacted]37); Luxembourg (26[redacted]rance (22, [redacted]7)[redacted]d (28)[redacted]ales (29); Spain (52); So[redacted]frica

[redacted] *Potamo[redacted]is* Brady, 1870

Po[redacted]ypris zs[redacted]kei (Kaufm[redacted]

Mate[redacted] July[redacted]tion-[redacted]9.07.1997, 4 [redacted]mbe[redacted]tati[redacted] .

[redacted]rd fro[redacted] Adana ([redacted] Bursa[redacted] Istanbul (1[redacted]

K[redacted]n Distributi[redacted](37)[redacted] [redacted]; Sp[redacted]

[redacted]family: Da[redacted]ulida[redacted]9

F[redacted] Darwinul[redacted]Brady[redacted]

Genus: [redacted]

Darwinula s[redacted]rady & R[redacted]n,

Material: July: S[redacted] 12, 19.07.1997, 2 [redacted]997, 4 Station-14[redacted] 19.07.1997, 1 ; S[redacted]ember: Stati[redacted], 11.10[redacted] ; Station-12, 11[redacted] 2 Station-14, 11.1[redacted]997, 2 ; Station-[redacted] 11.10.1997, 2 .

Previous record from Turkey: Bo[redacted]Afyon (7); Bursa, Adapazarı and Izmit (12).

Known Distribution: Europe, North Africa (23); Iran (2); Black Sea, Sea of Azov (60); Germany (30); United States of America (61); Germany (40, 62); Belgium (37) and France (22, 27).

Results and Discussion

Lake Beyşehir is the largest freshwater lake and the 3rd largest lake in Turkey.

Our findings show that the geographical distribution of 3 species of the genus *Ilyocypris* (*Ilyocypris biplicata, Ilyocypris gibba, Ilyocypris bradyi*) is much broader in western Anatolia than previously reported.

These species are known to have originated from the Tethys Sea (approximately 20 million years ago). The Tethys Sea stretched from the eastern Mediterranean to the Persian Gulf, and from the Middle East and North Africa to South and East Europe (63).

In this study, one species of the genus *Candona* (*Candona neglecta*) was found in this lake. This species has a worldwide distribution including Anatolia. Satisfactory collection of *C. neglecta* was possible only from the places where the water currents were very slow and a sufficient accumulation of slime and detritus was present at the bottom (20). The depth of such water does not usually exceed 1.0 to 2.0 m. Adult females and males were found throughout the year (20). Males are always fewer in number than females (20). *Candona neglecta* has an exceptionally high resistance to such factors as drought and increases in temperature of 20°C and higher. Thus it is a stenothermic psychrophilic form (20).

In this study, 1 species (*Pseudocandona compressa*) of the genus *Pseudocandona, Pseudocandona compressa* was found in the lake. However, it has previously been recorded from the Thrace region of Turkey (15). The zoogeographical distribution of this species is known from Europe and Siberia (23); and Sweden, England, Germany and Czechoslovakia (19). *P. compressa* was found frequently at various localities. It prefers not only shallow waters such as canals and oxbows, but also rivers and littoral zones (20).

The species *Physocypria kraepelini,* of the genus *Physocypria,* was found in the lake. This is a very common ostracod species, which thrives in eutrophic conditions. This species inhabits permanent and temporary water bodies, and small ponds as well as big rivers and streams.

One species (*Cypria ophthalmica*) belonging to the genus *Cypria* was found in the lake. Its zoogeographical distribution is known from Europe, North Africa, North America (20), Iran (3); Bulgaria (36, 40); Bulgaria (21); Germany (30, 41); Belgium (25); Belgium (37); Luxembourg; (26); France (22, 27) and Wales (29).

Another species (*Eucypris virens*) of the genus *Eucypris* was recorded in the lake. The geographical distribution of this species has been reported from Western Anatolia (4, 5, 7, 8, 12, 13, 16). Many researchers (3, 19, 20, 21, 22, 26, 28, 29, 35, 45; 46, 47, 48, 49, 50, 51, 52, 54, 55) have reported wide geographical distribution of this species. *E. virens* originated in South and Central Europe and has been placed among the species that reached Anatolia. According to Demirsoy (63), this species of *Eucypris* is a Gondwana relict. However, considering the general distribution of some species of the genus *Eucypris,* the origin or shift of these species into Anatolia is either the same or different.

The species *Prionocypris zenkeri* of the genus *Prionocypris* was found in Lake Beyşehir. *Prionocypris zenkeri* probably originated in South and Central Europe and reached the Aegean vicinity via water-flow. Some rivers were flowing into the lake during the era when *Eucypris virens* entered Anatolia. Its presence in the Marmara region shows that this species, may have a come from the Danube basin to the Pontic Inland Sea, which has much less salty water, and then passed through the Marmara Sea towards the ancient internal lake of Anatolia.

Two *Heterocypris* species were determined in the lake. The parthenogenetic population of *Heterocypris incongruens* has a wide distribution, while the bisexual population is known from Hungary (64), Germany (65) and North Africa (42). In Turkey, the bisexual population of this species was first reported from a water canal in Pamukkale- Denizli (7) and from Lake Küçükçekmece in İstanbul (13). It is a typical cosmopolitan species. *H. incongruens* mainly inhabits small water bodies including ponds, rock pools, tire tracks, and man-made containers such as cement tanks (20). It is often found in ponds with muddy bottoms poor in plant growth (20).

During this study, one species (*Heterocypris rotundata*) of the genus *Heterocypris* was determined for the 1st time in the lake and is a new record for the Ostracoda

fauna of Turkey. This species has been recorded from Northern Caucasia and Georgia (20).

The species *Psychrodromus olivaceus* of the genus *Psychrodromus* was found within its known distribution. The parthenogenetic population of *P. olivaceus* is known from Europe (35), Caucasia (20) and Turkey (3, 5, 11, 12, 13). However, its bisexual population was first recorded from Yugoslavia (36) and then from Lake Karamık, Afyon, Turkey (8). *P. olivaceus* is a typical crenobiont and is only found in spring water. It prefers fresh spring water and is found throughout the year, producing 1 to 2 generations per annum (20).

The species *Cypridopsis vidua* of the genus *Cypridopsis,* found in Lake Beyşehir, has previously been reported from Eskişehir (5); Gökçeada, Istanbul, Bolu, Zonguldak, and Kırklareli (7). This species has also been reported from Russia (20). The parthenogenetic population of *C. vidua* is distributed all over Europe. According to its wide ecological range, *C. vidua* is a cosmopolitan species occurring in Eurasia, North Africa, and North and South America. This species is very common in a wide variety of aquatic habitats, such as pools, canals, coastal lagoons, marshes, lakes, rivers and rice fields (20). The wide tolerance range of this species reflects its wide ecological range and cosmopolitan origin (20).

Another species (*Potamocypris zschokkei*) of the genus *Potamocypris* was found in Lake Beyşehir. This species has often been referred to as *Potamocypris wolfi*, as described by Brehm, 1920. It has also been reported from Adana (3), Izmir (11), Bursa (12) and Istanbul (14) in Turkey and *Potamocypris zschokkei* from the Alps (57), Spain (43, 58, 52) Luxembourg (59, and France (22, 27). *P. zschokkei* is a crenobiont and stenotherm species occurring in cold waters and prefers shallow, slow-running water (20). Bisexual populations are only known from the Spanish Pyrenes at an altitude of about 1400 m (43, 58). Parthenogenetic populations of *P. zschokkei* are widely distributed in Europe.

The species *Darwinula stevensoni* of the genus *Darwinula* was noted in the lake Beyşehir. Its existence in Western Anatolia was reported by Gülen (5, 7), Altınsaçlı and Kubanç (10) and Altınsaçlı (12), and has also been reported from Europe, North Africa (23); Iran (2); the Black Sea, the Sea of Azov (60); Germany (41); the United States of America (61); Germany (40, 64); Belgium (37); and France (22, 27). *Darwinula stevensoni* is one of the species encountered frequently in lakes and is a known benthic ostracod species. It does not lay eggs in water, because the development of eggs takes place within the shell. Normally, 5 to 7 eggs are found within the shell of an adult female. The typical habitat of this species is the bottom of lakes; however, it has been reported from wet moss (20). It is also found in small seasonal water bodies and lake beds, predominantly in the littoral region, which indicates its eurythermic nature (20).

References

1. Schäfer, H. W., Über Süsswasser- Ostracoden Aus der Türkei., Hydrobiologi. İstanbul Seri B. 1, 7-32, 1954.
2. Löffler, H., Beitrage zur Kenntnis der Iranischen Binnengewasser II. İnt. Rev. Ges. Hidrobiol. Hyrdogr. 46: 309-406, 1961.
3. Hartmann, G. Asiatische Ostracoden, Systematische und Zoogeographische Untersuchungen.- Internationale Revue der Gesamten Hydrobiologie, Systematische Beihefte, 3: 1-155, 1964.
4. Gülen, D., Animals Encountered in the Hot-springs of North Anatolia., Med. Terap. Hidroklimatoloji Yıllığı :16-17. 1975.
5. Gülen, D., Contribution to the Knowledge of the Freshwater Ostracoda Fauna of Turkey.- İst. Üniv. Fen Fak. Mec. Seri B. 42: 101-106, 1977.
6. Gülen, D., Türkiye İçin Yeni Notodromas (Ostracoda) Türleri. Tübitak VII. Bilim Kongresi Tebliğleri: 561-564, 1982.
7. Gülen, D., The Species and Distribution of the Group of Podocopa (Ostracoda- Crustacea) in Freshwaters of Western Anatolia-İst. Üniv. Fen Fak. Mec. Seri B. 50: 65-82, 1985 a.
8. Gülen, D., Bisexual Ostracoda (Crustacea) Populations in Anatolia. Üniv. Fen Fak. Mec. Seri B.50: 81-86, 1985b.
9. Gülen, D., Türkiye Tatlısu Ostrakod Faunasına Katkılar II./ Contribution to the Taxonomy of the Freshwater Ostracoda Fauna of Turkey. Su Ürünleri Dergisi (Journal of Aquatic Products), 2, 1: 199-102,1988.
10. Altınsaçlı, S. & Kubanç, C., Ayvalık Yöresi Ostrakod (Crustacea) Faunası. X. Ulusal Biyoloji Kongresi Tebliğleri, Erzurum: 55-62, 1990.
11. Altınsaçlı, S., Bergama (İzmir) Yöresi Ostrakod (Crustacea) Faunası ve Mevsimsel Dağılımı,Yüksek Lisans Tezi Istanbul Univ. Fen Bilimleri Enstitüsü,1988.
12. Altınsaçlı, S., Sapanca ve İznik Göllerinin Ostrakod (Crustacea) Faunası ve Zoocoğrafik Dağılımı, Doktora Tezi Istanbul Univ. Fen Bilimleri Enstitüsü, 1993.
13. Külköylüoğlu, O., Altınsaçlı, S. & Kubanç, C., Küçükçekmece Gölünün (İstanbul) Ostrakod (Crustacea) Faunası ve Mevsimsel Dağılımı. Doğa- Tr. J. of Zoology 17, 19-27, 1993.

14. Külköylüoğlu, O., Altınsaçlı, S., Kılıç, M. & Kubanç, C., (1995): Büyükçekmece Gölünün (İstanbul) Ostracoda (Crustacea) Faunası ve Mevsimsel Dağılımı. Doğa- Tr. Journal of Zoology 19: 249-256, 1995.

15. Altınsaçlı, S. & Yılmam, S., Terkos Gölü (Durusu Gölü) Ostrakod (Crustacea) Faunası Tr. Journal of Zoology 19 : 207-212, 1995.

16. Külköylüoğlu, O., Freshwater Ostracoda (Crustacea) and Their Quarterly occurrence in Şamlar Lake (İstanbul-Turkey), Limnologica 28 (2): 229- 235, 1998.

17. Yarar, M. & Magnin, G., Türkiye'nin Önemli Kuş Alanları, Doğal Hayatı Koruma Derneği Yayınları, İstanbul, 1997, ISBN: 975-96081-6-2, 314, 1997.

18. Hartmann G. & Puri S. H., Summary of Neontological and Paleontological Classification of Ostracoda., Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut, 70: 7-73, 1974.

19. Sars, G. O., Ostracoda - An Account of the Crustacea of Norway, Vol. Vol IX, The Bergen Museum, Bergen: 1-277, 1928.

20. Bronstein, Z. S., Fresh-water Ostracoda. Fauna of the USSR. Crustaceans. Vol. II, Number I, Academy of Sciences of the USSR, Publishers, Moscow: 1-470, 1947.

21. Sywula, T., Notes on Ostracoda II: On Some Bulgarian Species Bull. Soc. Amis. Sci. Lettr. Poznan (D) 8: 11-142, 1967.

22. Meisch, C., Wouters, K., Martens, K., Liste annotee des Ostracodes actuels non-marins trouves en France (Crustacea, Ostracoda), Trav. sci. Mus. Hist. Nat. Luxemb., 15: 1-62; 1990.

23. Klie W., Ostracoda, Muschelkrebse.In: Die Tierwelt Deutschlands und Der Angrenzenden Meeresteile, Gustav Fischer, Jena 1938, 34: 1-230, 1938.

24. Barbeito-Gonzales, P.J., Die Ostracoden des Künstenbereiches von Paros und Naxos (Griechenland) und ihre Lebensbereiche.1 Mitt. Hamburg. Zool. Mus. Inst. Band 67, Taf I-XLVII.: 255-326, 1971.

25. Martens, K., On Some Freshwater Ostracods (Crustacea, Ostracoda) from Hoboken Polder, Including *Potamocypris unicaudata* (Schäfer) and *Potamocypris smaragdina* (Vavra), Two New Species for the Belgian Fauna.- Biologish Jaarboek Dodonaea, 50: 124-134, 1982.

26 Meisch, C., Liste commenteé des ostracodes trouvés au Luxembourg (Crustacea, Ostracoda), Archives de l'Inst. Grand Ducal Luxembourg., Section des Sciences, Tome XL.: 47-51, 1987a.

27. Meisch, C., Ostracodés D`eau douce récoltés dans le sud- ouest de la France (Crustacea, Ostracoda), Bull. Soc. Nat. Luxemb., 87: 89-118, 1987b.

28. Namiotko, T., Freshwater Ostracoda (Crustacea) of Zulawy Wislane (Vistula Fen Country, Northern Poland). (Sladkowodne Malzoraczki (Ostracoda- Crustacea) Zulaw Wislanych (Polnocna- Polska). Acta. Zool. Cracov. 33, 19, 459-484, 1990.

29. Griffiths, I. H. & Evans, G. J., Some freshwater Ostracods (Crustacea: Ostracoda) from South Wales Freshwater Forum 1, 64-72, 1991.

30. Scharf, B. W., Zur Resenten Muschelkrebsfauna es Naturschutzgebietes "Hördter Rheinaue", Mitt. Pollichia. 64: 121-128, 1976.

31. Brady, G. S. & Norman, A. M., Monograph of the Marine and Freshwater Ostracoda of the North Atlantic and of the North-western Europe, Section I: Podocopa. Scientific Transactions of the Royal Dublin., 1889, Serie 2.(2): 63-273, 1889.

32. Vavra, W., Monographie der Ostracoden Boehmens Arch. Naturwiss. Landesdurchforsch Boehmen, 8. 1-116, 1891.

33. Kaufmann, A., Die Schweizerischen Cytheriden, Revue Suisse de Zoologie et Annales du Museé d'Historie Naturelle de Genéve:4 (2) plts.XII-XV: 313-384, 1896.

34. Ekman, S., Beitrage zur Kenntiss der Süsswasser Ostracoden Zool. Jahrb., 1912

35. Müller, G.W., Crustacea: Ostracoda.-Das Tierreich, Friedländer & Son, Berlin,1 912, 31: 1-434, 1912.

36. Petkovski T., Süsswasserostracoden Aus Jugoslawien VI.- Acta Mus. Maced. Sci. Nat. 4: 53-75, 1959.

37. Martens, K., Dumont, J. H., The Fauna (Crustacea, Ostracoda) of Lake Donk (Flander): A Comparison Between Two Surveys 20 Years Apart. Biol. Jb. Dodonaea, 52: 95-111, 1984.

38. Namiotko, T., Uwagi Morfologiczne o Dwoch Gatunkach Malzoraczkow: *Eucypris moravica* Jancarik, 1947 i *Candona* (*Candona*) *neglecta* Sars, 1887 (Crustacea: Ostracoda).- (Morphologica) Notes on Two Ostracode Species: *Eucypris moravica* Jancarik, 1947 and *Candona* (*Candona*) *neglecta* Sars, 1887 (Crustacea: Ostracoda)., Przeglad Zoologiczny XXXII, 4. 611-615, 1988.

39. Petkovski T., Süsswasserostracoden aus Jugoslawien VII.- Fragm. Balcan.3: 99-106, 1960.

40 Petkovski T., Ostracoden fauna des Mindelsees.- Acta. Mus. Maced. Sci. Nat. 15: 49-94, 1977.

41. Hiller, D., Untersuchengen zur Biologie und zur Okologie Limnischer Ostracoden aus der umgebung von Hamburg-Archiv.für Hydrobologie, Supplement, 40: 400-497, 1972.

42. Gauthier, H., Ostracodes et Cladoceres de L`Afrique du Nord (Ze note).-Bull.Soc. Hist. Nat. Afrique Nord 19: 69-79, 1928.

43. Margalef, R., Los Crustáceos de las aguas continentales Ibéricas. Instituto Forestal de Inv. Y Exper, Madrid: 2 43, 1953a.

44. Margalef, R., Materiales para hidrobiologia de la isla de Mallorca. Publicaciones del Instituto de Biologia Aplicada 15: 5-111, 1953b.

45. Margalef, R., La vida en las aguas de elevado residuo salino de la provincia de Zamora. Publicaciones del Instituto de Biologia Aplicada 24: 123-137, 1956.

46. Armengol, J., Ostracodes de la Vall de Bigues .-Treb.Soc. Cat.Biol .32:121-125, 1972.

47. Armengol, J., Crustáceos acuáticos del Coto de Doñana.-Oecol. aquat.2:93-97, 1976.

48. De Deckker, P., Ostracoda from Australian Inland Waters-Notes on Taxonomy and Ecology, Proceeding of the Royal Society of Victoria (Melbourne), 93: 43-85, 1981.

49. Alonso, M., Las comunidades de entomostráceos de las lagunas de villafáfila (Zamora). Act.I Congr.Esp.Limnol.:61-67, 1983.

50. Sabater, F., Comunidades des crustáceos de las lagunas de Tordera (Barcelona) en relación con sus caracteristicas ambientales. Actas I Congr. Esp. Limnol.: 23-33, 1983.

51. Paulo, L. F., Moutinho, M. Systématique et distribution des Ostracodes au Portugal .-Publ. Inst. Zool." Dr. A. Nobre " 173: 1-32, 1983.

52. Baltanás, A., A contribution to the knowledge of the cypridid ostracode fauna (Crustacea-Ostracoda, Cyprididae) on the Iberian peninsula and comparison, and a comparison with adjacent areas. arch Hydrobiol./ Bd.90 (Monograpische Beiträge), 3: 419-452, 1992.

53. Kılıç, M., Karadeniz Kıyıları Ostrakod (Crustacea) Faunası, İstanbul Üniversitesi Fen Bilimleri Enstitüsünde Doktora Tezi (Ph.D. Thesis) İstanbul Üniversitesi, Fen Fakültesi, 1997.

54. Danielopol, L. D. & Mc Kenzie, G. K., Psychrodromus gen. n (Crustacea, Ostracoda), with redescription of the Cypridid genera *Prionocypris* and *Ilyodromus*. Zoologica Scripta, 6: 301-322, 1977.

55. Petkovski T., Ostracoden aus Einigen Quellen der Slowakie. Acta. Mus. Maced. Sci. Nat.10: 91-168, 1966.

56. Martens, K., Davies, B. R., Bakter, A. J. & Meadows, M. E., Contribution to the knowledge and ecology of the Ostracoda (Crustacea) from Verlorenvlei (Western Cape, South Africa). S. Afr. J. Zoology, 31 (1): 23-26, 1996.

57. Zschokke, F., Die Tierwelt der Hochgebirgsseen-Neue Denkschriffen der allgemeinen schweizerischen Gesellschaft für die gesamten naturwissenschaften, 37:1-382 (14.Ostracoda), 1900.

58. Margalef, R., Datos zoogeográficos sobre Ostrácodos de agua dulce de Cataluña y descripción de la nueva especie *Potamocypris pyrenaica*. Publicaciones del Instituto de Biologia Aplicada 3: 163-171, 1946.

59. Meisch, C., Revision of the recent Western Europe species of the genus *Potamocypris* (Crustacea, Ostracoda). Part. I- Trav. Sci. Mus. Hist. Nat. Luxemb. 3: 1-55. 1984.

60. Schornikov, E.N., Ostracoda, führer der Fauna des Schwarzen Meeres Der Azov-see (Opredelite Fauna Çernogo i Azovskoyo More). In: Vodyanitskii, A.A.: Freilebenden Invertebraten; Crustacean.- Akad. Nauk. U.S.S.R. Inst. Biol., Naukova Dumka Kiev: 163-260, 1967.

61. Keyser, D., Zur Kenntnis der Brackigen Mangrovebewachsenen Weichböden Südwest- Floridas Unter Besonderer Berücksichtigung Ihrer Ostracoden Fauna. Zur Erlengug des Doktorgrades de fachbereichs Biologie der Universtat Hamburg, 1976.

62. Kempf, K. E. & Scharf, W. B., Lebende und Fossile Muschelkrebse (Crustacea: Ostracoda) vom Laacher See, Mitt.Pollichia.68: 205-236, 10 Abb.3 Tab. ISSN 0341-9665, 1980.

63. Demirsoy, A., Zoocoğrafya. Türkiye Faunası A-Ek Band. Hacettepe Üniv. Fen.Fak. Yayın. Ders Kitapları Dizisi: 10, Ankara: 1-53, 1979.

64. Daday, E., Ostracoda of Hungary. Zool. Jahrb. Syst. 19: 1-181, 1903.

65. Wohlgemuth R., Beobachtungen und Untersuchungen über die Biologie der Süsswasser -ostracoden, İhr Vorkommen in Sachsen und in Böhmen, ihre Lebensweise und ihre Fortpflanzung, Intern. Rev. d. Ges. Hydrob. und Hydrogr. 7. (Biol suppl. 2): 1-12, 1914.