

T.R.
BOLU ABANT İZZET BAYSAL UNIVERSITY
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Department of Biology



**DETERMINATION OF THE DISTRIBUTION AND
ECOLOGICAL CHARACTERISTICS OF OSTRACODA
(CRUSTACEA) SPECIES IN THE TURKISH REPUBLIC OF
NORTHERN CYPRUS**

MASTER OF SCIENCE

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DETERMINATION OF THE DISTRIBUTION AND ECOLOGICAL CHARACTERISTICS OF OSTRACODA (CRUSTACEA) SPECIES IN THE TURKISH REPUBLIC OF NORTHERN CYPRUS

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ABSTRACT

DETERMINATION OF THE DISTRIBUTION AND ECOLOGICAL CHARACTERISTICS OF OSTRACODA (CRUSTACEA) SPECIES IN THE TURKISH REPUBLIC OF NORTHERN CYPRUS

MSC THESIS

AHMET ÖZDİLEK

BOLU ABANT İZZET BAYSAL UNIVERSITY

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DEPARTMENT OF BIOLOGY

(SUPERVISOR: PROF. DR. OKAN KÜLKÖYLÜOĞLU)

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(XIII + 149)

This study aimed to determine the distribution and ecological characteristics of Ostracoda species in the Turkish Republic of Northern Cyprus. Also, it is aimed to elaborate the species composition between the Mersin (Türkiye) and Cyprus and study the importance of the Island Biogeography Theory for ostracods reported from the islands located in the Southern and Northern hemisphere. Total of 79 sites were randomly sampled between 18 May to 12 August 2022 and 28 living ostracods from 15 different habitats were identified. Of which, 24 species are new records for the island. Calculation of the ecological tolerance and optimum values of 17 species displayed that species with cosmopolitan and/or cosmoecious characteristics had higher tolerance values for different ecological variables. The first two axes of Canonical Correspondence Analyses (CCA) explained 64.3 % of relationships between species and environmental and chemical variables. Most effective variables on the species were EC, Mg^{+2} and Ca^{+2} . Ternary Plots exhibited that Na^{+} and Cl^{-} were dominant variables in the waters of sampling sites. A non-parametric Spearman Rank Correlation analysis outlined the correlation between eight species and nine environmental and chemical variables. The t-test result revealed that there was no significant difference between the Mersin and Cyprus. Result of this study and literature research, 256 species from Northern and 121 species from Southern hemisphere were detected with 26 common species. As a result of the evaluation of the Island Biogeography Theory, the number of species tend to increase as the island located closer to the mainland.

KEYWORDS: Ostracoda, Habitat Diversity, Distribution, Ecology Preference, Tolerance and Optimum Estimates, Island Biogeography Theory

ÖZET

**OSTRAKODA (CRUSTACEA) TÜRLERİNİN KUZHEY KIBRIS TÜRK
CUMHURİYETİ'NDEKİ YAYILIŞ VE EKOLOJİK ÖZELLİKLERİNİN
BELİRLENMESİ
YÜKSEK LİSANS TEZİ
AHMET ÖZDİLEK
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LİSANSÜSTÜ EĞİTİM ENSTİTÜSÜ
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(TEZ DANIŞMANI: PROF. DR. OKAN KÜLKÖYLÜOĞLU)**

**BOLU, HAZİRAN - 2024
(XIII + 149)**

Bu çalışma, ostrakod türlerinin Kuzey Kıbrıs Türk Cumhuriyeti'ndeki dağılım ve ekolojik özelliklerinin belirlenmesini amaçlamıştır. Ayrıca Mersin (Türkiye) ve Kıbrıs arasındaki tür kompozisyonunun detaylandırılması ve Güney ve Kuzey yarımkürede yer alan adalardan bildirilen ostrakodlar için Ada Biyocoğrafyası Teorisinin öneminin araştırılması amaçlanmaktadır. 18 Mayıs-12 Ağustos 2022 tarihleri arasında 15 farklı habitattan 28 canlı ostrakod tespit edildi. Bunlardan 24 tür Kuzey Kıbrıs için yeni kayıttır. 17 türün ekolojik tolerans ve optimum değerlerinin hesaplanması, kozmopolit ve/veya kozmik özelliklere sahip türlerin farklı ekolojik değişkenler için daha yüksek tolerans değerine sahip olduğunu ortaya koymuştur. Kanonik İlişki Analizinin (CCA) ilk iki eksenini türler ile çevresel ve kimyasal değişkenler arasındaki ilişkilerin %64,3'ünü açıklamıştır. Türler üzerinde etkili olan en etkili değişkenler EC, Mg^{+2} ve Ca^{+2} olmuştur. Üçlü Grafik, örnekleme alanlarının sularında Na^{+} ve Cl^{-} 'nin baskın değişkenler olduğunu gösterdi. Parametrik olmayan Spearman korelasyon analizi, sekiz tür ile dokuz çevresel ve kimyasal değişken arasındaki korelasyonun ana hatlarını çizdi. t-testi sonuçları, Mersin ile Kuzey Kıbrıs arasındaki tür toplulukları arasında önemli bir fark olmadığını ortaya koydu. Bu çalışma ve literatür araştırması sonucunda 26 ortak türle birlikte, Kuzey yarımküreden 256, Güney yarımküreden 121 tür tespit edildi. Ada Biyocoğrafya Teorisi'nin değerlendirilmesi sonucunda adanın anakaraya yakınlaşmasıyla türlerin sayısı artma eğilimindedir.

ANAHTAR KELİMELELER: Ostrakoda, Habitat Çeşitliliği, Dağılım, Ekoloji Tercihi, Tolerans ve Optimum Tahminler, Ada Biyocoğrafyası Teorisi

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LIST OF ABBREVIATIONS AND SYMBOLS

ATM	: Atmospheric Pressure (mmHg)
Cnt	: Species' Existence
Dep	: Depth (cm)
EC	: Electrical Conductivity (ms cm^{-1})
Elev	: Elevation (m a.s.l)
LV	: Left Valve
Mx	: Maximum Existence of Species
ORP	: Oxidation Reduction Potential (mv)
Res	: Resistant
RV	: Right Valve
SAL	: Salinity (ppt)
SEM	: Scanning Electron Microscope
St No	: Site Number
TDS	: Total Dissolved Solid (ppt)
tk	: Tolerance
Tw	: Water Temperature ($^{\circ}\text{C}$)
uk	: Optimum

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1. INTRODUCTION

1.1 Ostracoda

Ostracoda, except in some marine species, are small (0.3-5.0 mm) aquatic crustaceans, and the name Ostracoda is derived from the Greek word "ostrakon", meaning shell (Meisch, 2000). The first ostracod species was described as *Monoculus conchapedata* by Linnaeus in 1748 (Alm, 1916, in Ferguson, 1942).

They are one of the common microfossils in the world because of their shells which consists of low calcium magnesium ratio (Horne et al., 2002). Dating back to the earliest times, the ostracods were known from the Silurian period, about 425 million years ago (Williams et al., 2008).

Determining the quality of water bodies Ostracoda can be used as indicator species (Külköylüoğlu, 2014). However, this requires knowledge about the current ecological and distributional information of the individual species (Külköylüoğlu and Yılmaz 2006).

Ostracoda are known to be carnivores, herbivores, detritivores and omnivores (Horne, 2003). They are prey for other organisms (e.g. for water mite (Davids et al., 1981) and for fish (Mbahinzireki et al., 1991)), and also live as predator (e.g. for rotifer (Gilbert, 2012)) in aquatic environments.

1.2 Morphology

The body is confined within two calcified valves and valves are closed via by adductor muscles. Muscle scars are formed at the points where these muscles are attached, and these muscle scars have an important place in taxonomic diagnosis (Martens, 1998; Karanovic, 2012).

In ostracods, growth of organism is possible via by the molting process (Karanovic, 2012; Ozawa, 2013). In Podocopida, there are eight life phases, these phases occur throughout the life of ostracods (Figure 1.1.). Eight moulting cycles (A1-8) are experienced and after the last stage, they become adults (A) and became sexually active (Ozawa, 2013).

Although there are different reproduction methods, it is known that some species have sexual reproduction (males and females present), some species have asexual (without male), and mixed reproduction (Horne and Martens, 1998; Martens et al., 2008).

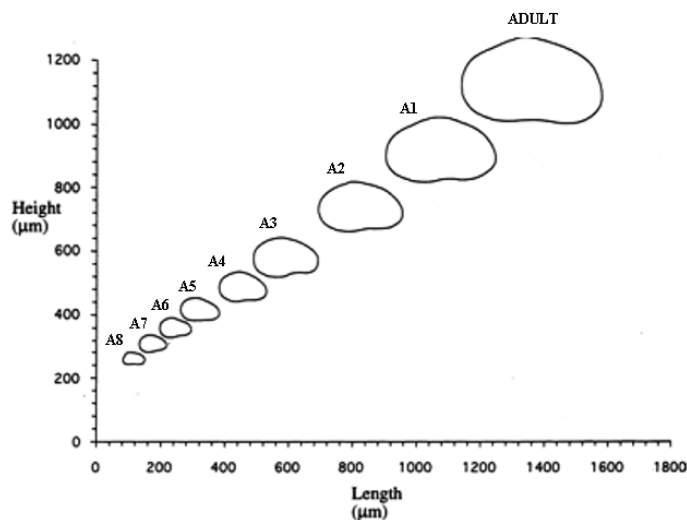


Figure 1.1. Carapace improvement of the instars of *Eucypris virens* modified from Smith and Martens (2000).

1.3 Dispersal Mechanisms and Ecology

Ostracods are almost live in all aquatic habitats and they are greatly dispersed in range of marine, nonmarine, terrestrial and semiterrestrial environments (Meisch, 2000; Horne et al., 2004; Keyser and Walter, 2004; Ikeya et al., 2005). Therefore, the habitats of ostracods are very wide form the fresh waters to salty waters, from the lakes of the high mountains to depths of the seas (Baltanás et al., 2000).

As stated above, ostracods can be found in variety of habitats and not only the mainlands but also the islands as well. One of the oldest Ostracoda studies on an islands was made by Baird (1862) in Sandwich islands and Jamaica. As a result of his study, *Chlamydotheca unispinosa* (Baird, 1862) from Sandwich islands and *Stenocypris major major* (Baird, 1859) from Jamaica were reported that these species are probably the oldest species described from these islands.

According to the Kempf (1980, 1997) approximately 30,000 ostracod species were known and 8000 of it were freshwater species (Lévêque et al., 2005), on the other hand according to the Meisch (2000), 62,000 species were known, and Ikeya et al. (2005) emphasised, 65,000 ostracod species were identified. Lastly Meisch et al. (2019) indicated 2330 freshwater species known. In parallel with the increase in taxonomic studies, the number of species has been constantly increasing

with new species being identified (e.g. Külköylüoğlu et al., 2020; Savatenaalinton, 2020; the present study).

Freshwater invertebrates have extensive dispersal mechanisms called active and passive, thus these mechanisms play an important role in the processes of colonization, gene flow and evolutionary divergence (Bilton et al., 2001). Some ostracod species have various mobility abilities such as swimming freely, moving on the surface of the water (Mendis and Fernando, 1962) however in some, they are non-swimmers (Matsuda et al., 2015). Ostracods can be transferred by active or passive dispersal mechanisms (Külköylüoğlu et al., 2020). They owe their success in dispersal and colonization to new regions along with passive transport. Fish (Vinyard, 1979), human (Meisch, 2000), waterfowl (Brochet et al., 2010), dry-resistant eggs (Karanovic, 2012), frog (Araújo et al., 2019), wind (Ramos et al., 2022) are important vectors during passive transport. Considering the distribution of ostracods by active transport, they can cross short distances by acting actively (Danielopol et al., 1994).

Ostracoda are thought to play an important role in showing responses to several different environmental changes, and their habitat selection can be related to their different ecological tolerance and optimum ranges (Akdemir and Külköylüoğlu, 2021). Biotic factors (e.g., competition, nutrition and prey-predator relationship (Danielopol 1981; Davids et al., 1981; Mbahinzireki et al., 1991; Fernandez et al., 2016) and abiotic factors (e.g., water temperature (Külköylüoğlu, 2005), lake area, Ca^{+2} , Mg^{+2} (Viehberg, 2006), moisture (Uçak et al., 2014), electrical conductivity, elevation (Yavuzatmaca et al., 2015) and dissolved oxygen (Ramos et al., 2022)) have been reported as effect factors on ostracod assemblages.

1.4 Classification

According to Maddocks (1982) ostracods are divided into four orders:

Myodocopida Sars 1866,

Platycopida Sars 1866,

Palaeocopida Henningsmoen 1953, and

Podocopida Sars 1866.

On the other hand, Martin and Davis (2001) and Horne et al. (2002) divide the class into subclass Myodocopa (with orders Myodocopida and Halocyprida) and Podocopa (with orders Platycopida, Podocopida, and Palaeocopida).

The class Ostracoda is divided into two subclasses which are Myodocopa and Podocopa subclass. All member of Myodocopans are not present in the fresh waters, they are all marine species and involving pelagic, nektobenthic and benthic species and separated two orders. These orders are Myodocopida and Halocyprida. While the Podocopans have fresh and marine members, and they are separated into three orders. These orders are the Platycopida (marine and few brackish species are known), the Podocopida (marine, brackish and fresh water species are known and freshwater species are formed 270 genera and three superfamilies (these three superfamilies Darwinuloidea, Cypridoidea and Cytheroidea), and last remain is the Palaeocopida (marine species are known) (Horne et al., 2002; Horne, 2003; Karanovic, 2012).

1.5 Island Biogeography Theory

Islands, with their variety, size, shape, ecological features and degree of isolation, supply essential replications in natural "experiment" where evolutionary hypotheses can be examined (MacArthur and Wilson, 1967). The migration of new species to the island and the extinction of existing species on the island constitute the equilibrium theory, and the equilibrium occurs when the incoming migration and the extinction rate of species on the island are equalized constitutes this theory. Fewer species present on the islands that are far from the source of colonization; islands with smaller areas receive less migration, larger islands receive more migration, which means that the number of species is expected to be higher on larger islands (Figure 1.2.) (MacArthur and Wilson, 1963; 1967).

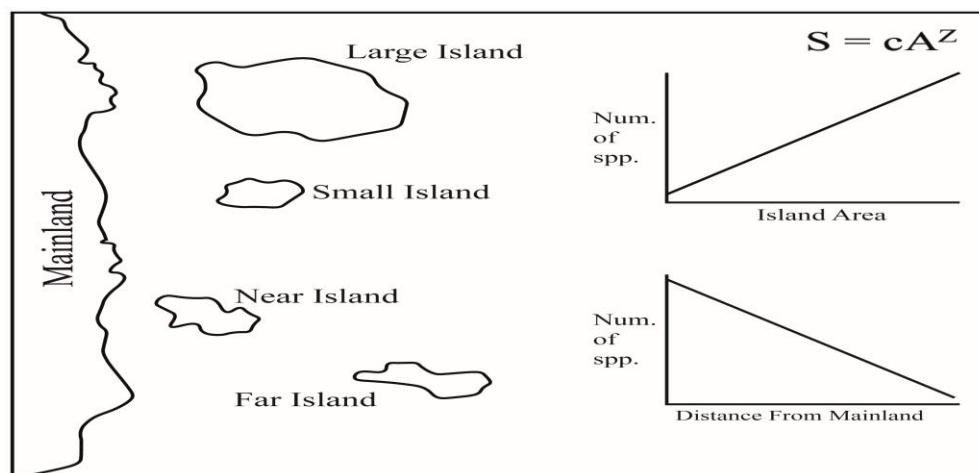


Figure 1.2. The effect of island area and island distance on the species. S: species number, A: island area, c and z: coefficient number.

1.6 Transport of Water From Türkiye to the Northern Cyprus

In the Northern Cyprus, groundwater has an important importance as there are no streams flowing continuously on the surface. Thirteen aquifer systems are known in the Northern Cyprus, three of which are the main aquifers (Elkiran and Ergil, 2006b). These three main aquifers are the Girne aquifer (Elkiran and Ergil, 2006b), the Güzelyurt aquifer (Kutoğlu, 2010), and the Gazimağusa aquifer (Şenol, 2021).

It is known that due to excessive use of ground water resources in the island, the level of underground resources decreased and sea water mixes with fresh water in some regions (Şenol, 2021; Tekin et al., 2021). Some measures were tried to be taken to solve the water problem in the Northern Cyprus and to raise the level of the aquifers on the island again. In this direction, water storage structures have been constructed for irrigation purposes and to protect the groundwater sources (Elkiran and Ergil, 2006a), along with plans to bring water from Türkiye were implemented.

The Medusa project was one of the projects implemented. Accordingly, in this work, the waters deposited in large water bags from Anamur Soğuksu (Türkiye) creek were transported to the Northern Cyprus. Later these waters carried to the island were transferred to the Northern Cyprus, where it was moved to the Kumköy coast near the Güzelyurt district (Elkiran and Ergil, 2004; Elkiran and Ergil, 2006a, b; Association, 2017).

Another project was to transport water from Türkiye to the Northern Cyprus by tankers (Akyar, 2015; Sümer, 2015).

Today, these projects do not continue, on the other hand, a new project has been implemented to transport water to the island, and this project is the project of bringing water from Anamur Dragon stream in Mersin (Türkiye) to the island Geçitköy dam by means of tubes placed under the sea and suspended under the water, and it is being used actively (Akyar, 2015; Sümer, 2015; Association, 2017).

1.7 History of Ostracoda Studies in the Island of Cyprus

The first Ostracoda study in the island of Cyprus was done by Charles Ducloz (1972). As a result of this paleontological study in the Kyrenia region, two fissil ostracod species (*Candona angulata* G.W. Müller, 1900 and *Herpetocypris reptans* (Baird, 1835)) were identified for the first time on the island (Ducloz, 1972). Following Ducloz's study, Balık et al. (2008) examining 11 ponds and one

dam in the north of the island, two species and one taxon (*Trajanocypris clavata* (Baird, 1838), *Cypris pubera* Müller, 1776, *Eucypris* sp.) were described living in the island.

Manzi et al. (2016) reported one fossil species *Cyprideis agrentine* (Decima 1964) in the Cyprus.

Cyprideis torosa (Jones, 1850) was also reported from the coastal area of the Cyprus by Wouters (2017).

According to Polidorou et al. (2021), *Limnocythere* sp. and *Heterocypris salina* (Brady, 1868) were collected with core study from the Akrotiri salt lake in the island.



2. AIM AND SCOPE OF THE STUDY

The main purposes of this study can be associated with the stated ideas are i) to determine Ostracoda distribution in the Turkish Republic of Northern Cyprus and acquire knowledge about chemical and environmental characteristics of the water bodies, ii) to understand ecological optimum and tolerance levels of species for different variables, iii) to correlate between species and chemical and ecological variables, iv) to determine the species composition of Mersin province and compare them with the Cyprus, v) to assess the importance of the theory of Island Biogeography on Ostracoda, vi) to reveal the ostracod distribution of the Mediterranean islands and non-Mediterranean islands and to emphasize the position of Cyprus among these islands, and vii) to determine the species distribution on islands located in the north and south equator.

Based on the main aims, following four hypotheses are tested:

Hypothesis 1: Distribution of ostracod species is not influenced by ecological, chemical and environmental variables (e.g., Ca^{+2} , Mg^{+2} , EC, pH, water temperature, elevation).

Hypothesis 2: There is no significant difference between the Cyprus and Mersin ostracod species diversity.

Hypothesis 3: There is no difference between the number of species from the islands located on the the north and south of the equator

Hypothesis 4: Island distance from the mainland has no effect on the distribution of species on the islands.

Hypothesis 5: Islands area have no effect on the distribution of species on the islands.

3. MATERIALS AND METHODS

3.1 Site Description

The island, Cyprus (total of 9.251 km²) is the third largest island after Sicily (25.460 km²) and Sardinia (24.090 km²) in the Mediterranean Sea. It is located at an important point in the eastern Mediterranean, with the island of Crete 545 km to the west of the island of Cyprus, the Nile Delta (Dimyat) 350 km to the south, the coast of Latakia city of Syria 103 km to the east, and Türkiye 70 km to the north (Şenol, 2021). The Turkish Republic of Northern Cyprus, which forms the northern part of the island Cyprus, has an area of 3.355 km² and consists of five cities including Güzelyurt, Girne, Lefkoşa, Gazimağusa, and Dipkarpaz. A typical Mediterranean climate is dominant, with hot and dry summer season, and with a warm and humid regime in winter (Charalambidou et al., 2008; Kassinis et al., 2010). The entry of cool and humid air from the north into the interior is interrupted by the Kyrenia Mountains, which stretch along the northern coast of the Northern Cyprus in an east-west direction. This geographical barrier reveals the regional climatic differences between the inner parts of the island and the coastal parts (Kutoğlu, 2010).

3.2 Sampling and Measurement

In the Northern Cyprus, total of 79 samples were randomly collected from 15 different sites (ponds, streams, creeks, springs, troughs, pools, fountains, dam, waterfall, dram well flood water, mains water puddle, temporary water in rock holes, backwater, irrigation canal and marine) during 18 May to 12 August 2022 (Figure 3.1.).

Some of the environmental variables (water temperature (Tw, °C), electrical conductivity (EC, ms cm⁻¹), total dissolved solids (TDS, ppt), salinity (SAL, ppt), pH, atmospheric pressure (ATM, mmHg), oxidation reduction potential (ORP, mv) and resistant) were measured before the sampling to avoid possible consequence of “Pseudoreplication” (Hurlbert, 1984) by Hanna multiparameter probe. Since the water level was not at a measurable level, environmental variables could not be measured at sites 16, 19 and 27. Due to the problem in the measuring instruments at site 69 environmental variables could not be recorded.

The basic geographical data (elevations, coordinates) were recorded with a geographical positioning system (GARMIN etrex Vista H GPS) *in situ*.

In order to determine the anions (Carbonate (CO_3^{-2}), Bicarbonate (HCO_3^-), Chloride (Cl^-), Sülphate (SO_4^{-2}) and cations (Sodium (Na^+), Magnesium (Mg^{+2}), Calcium (Ca^{+2})) from the sampling sites, water samples were taken into 100 ml plastic jars. Anions and cations were determined as a result of the analyzes made in Turkish Republic of Northern Cyprus Agriculture Department Güzelyurt Soil and Water Laboratory. Water analyzes (except for Na which was done with the flame emission photometry method) were carried out using gravimetric and titrimetric methods (APHA, 1999).

Standart hand-net (200 μm mesh size) was used to gather Ostracoda samples with sediments. The collected samples were placed *in situ* in 250 ml plastic jars with 70% ethanol. In the laboratory, gathered samples were filtered throughout three sieves (1.5; 1.0; 0.5 mesh size) under tap water and added in 250 ml plastic jars together with 70 % alcohol. Dissection of the Ostracoda species was done in lactophenol solution using fine needles under Olympus SZX7 stereomicroscope. Identifications were made with the Olympus BX 51 microscope and during the drawing camera lucida used which attached to Olympus BX 51 microscope. Adobe Illustrator CS5 was used for digital drawings. To get detailed photographs of the valves and carapace scanning electron microscope (SEM) was used at the department of geology, Hacettepe University, Türkiye. Different taxonomic keys and articles were used for the species identification (e.g., Meisch 2000; Pipik, 2007; Karanovic 2012; Horne et al., 2019). All samples are stored in the Limnology Laboratory of Bolu Abant İzzet Baysal University, Türkiye.

Ostracoda species in the Mersin province (Türkiye) were previously reported in a couple of studies (e.g., see Altınışıl and Griffiths, 2002; Dalgakıran et al., 2020; Yavuzatmaca, 2022). The close location of Mersin and Cyprus and the water transportation methods used in the past until today between them made Mersin, the region chosen for comparison.

The Ostracoda data (subfossils, fossils and living forms included) of 37 Mediterranean islands and 159 non-Mediterranean islands were obtained as a result of reviewing the existing literatures.

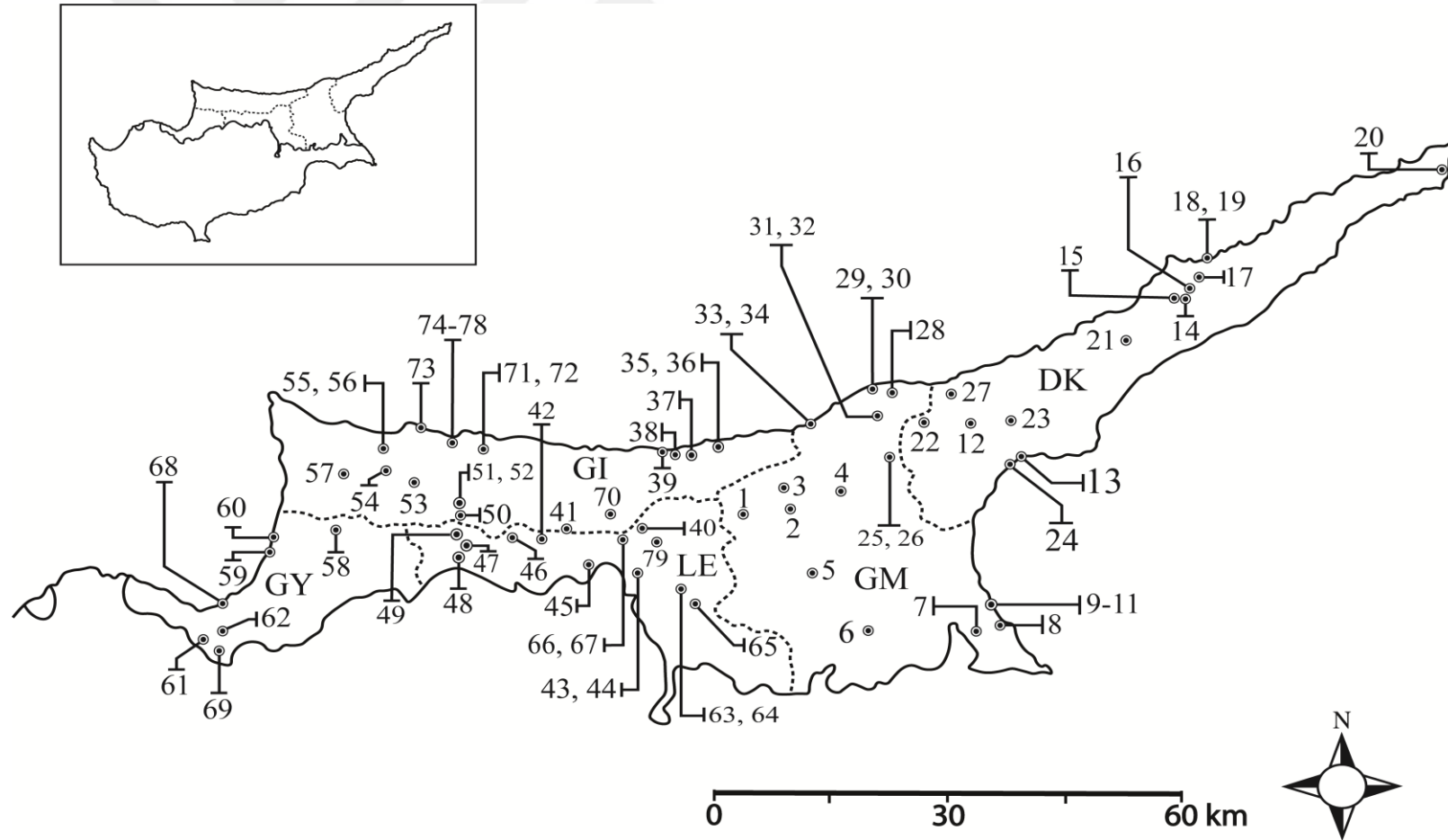


Figure 3.1. Randomly selected 79 sampling sites from five districts (Güzelyurt (GY), Girne (GI), Lefkoşa (LE), Gazimağusa (GM), Dipkarpaz (DK)) of the Turkish Republic of Northern Cyprus.

3.3 Statistical Analysis

C2 statistical analysis program was applied to reveal the species tolerance (tk) and optimum (uk) values with 17 species (recorded in at least two different sites and only adults were used), two ecological variables (water temperature, elevation), and seven chemical variables (pH, EC, Na, Ca^{+2} , Mg^{+2} , HCO_3^- , Cl^-). A transfer function of weighted averaging regression is run in the C2 analysis program (Juggins, 2003).

Ternary plot analyses was used by using anions (HCO_3^- , Cl^- , SO_4^{2-}) and cations (Na, Ca^{+2} , Mg^{+2}) to reveal the chemical characters of the water in the sampling sites. The species found from at least three different sites and the chemical data of these sites were used in the analysis. Only adult individuals were used for analysis, juveniles or carapaces were not included.

Canonical Correspondence analysis (CCA) was used with Monte Carlo Tests (499 permutations) to examine the relationship between 17 species and one environmental (water temperature) and four chemical variables (Tw, pH, Ca^{+2} , Mg^{+2} , EC). Species from at least two sites and their chemical and environmental datas were used. Before applying CCA analysis, Detrended Correspondence Analysis (DCA) analysis was performed to determine whether the data were suitable for CCA. When the DCA value is 3 and above, it is understood that the data are suitable for use for CCA (Birks et al., 1990; Ter Braak, 1987).

Two-tailed t-test was used with unequal variances to find out the mean values of Mersin and Cyprus with ostracod species similarities and differences. Only living species were used and species were listed as present or absent and the t-test carried out.

The non-parametric Spearman Rank Correlation was applied to figure out the correlation among chemical and ecological variables and species of the Northern Cyprus. The analysis was done in IBM-SPSS statistics version 21 program.

4. RESULTS

During the present study, 36 taxa and 28 species were found from 74 sites while five sites (sites 2, 25, 30, 35 and 61) did not cover ostracod (Appendix A, B, C, D, E). Twenty four species out of the 28 species are new records for the island. Most common species were *Heterocypris salina* (from 27 sites), *Cypridopsis vidua* (from 22 sites) and *Ilyocypris gibba* (from 19 sites). *Eucypris* n. sp.1 and *Eucypris* n. sp.2 are the first species of this genus recorded on the island and have also been added to the literature as a possibly new species for the island ostracod fauna (see section 4.3).

4.1 Taxonomic Results

PHYLUM: ARTHROPODA

SUBPHYLUM: CRUSTACEA Pennat, 1777

CLASS: OSTRACODA Latreille, 1802

SUBCLASS: PODOCOPA Müller, 1894

ORDER: PODOCOPIDA Sars, 1866

Suborder: PODOCOPINA Sars, 1866

Superfamily: Cypridoidea s. str. Baird, 1845

Family: Candonidae Kaufmann, 1900

Subfamily: Candoninae Kaufmann, 1900

Genus: Pseudocandona Kaufmann, 1900

Pseudocandona sucki (Hartwig, 1901)

Pseudocandona albicans (Brady, 1864)

Family: Ilyocyprididae Kaufmann, 1900

Subfamily: Ilyocypridinae Kaufmann, 1900

Genus: Ilyocypris Brady & Norman, 1889

Ilyocypris gibba (Ramdohr, 1808)

Ilyocypris monstifica (Norman, 1862)

Ilyocypris decipiens Masi, 1905

Ilyocypris bradyi Sars, 1890

Ilyocypris inermis Kaufmann, 1900

Family: Cyprididae Baird, 1845

Subfamily: Eucypridinae Bronstein, 1947

Genus: Eucypris Vávra, 1891

Eucypris n. sp.1

Eucypris n. sp.2

Genus: Trajancypris Martens, 1989

Trajancypris clavata (Baird, 1838)

Subfamily: Herpetocypridinae Kaufmann, 1900

Genus: Herpetocypris Brady & Norman, 1889

Herpetocypris reptans (Baird, 1835)

Herpetocypris brevicaudata Kaufmann, 1900

Herpetocypris chevreuxi (Sars, 1896)

Herpetocypris intermedia Kaufmann, 1900

Genus: Psychrodromus Danielopol & McKenzie, 1977

Psychrodromus olivaceus (Brady & Norman, 1889)

Genus: Stenocypris Sars, 1889

Stenocypris major (Baird, 1859)

Subfamily: Cyprinotinae Bronstein, 1947

Genus: Heterocypris Claus, 1892

Heterocypris incongruens (Ramdohr, 1808)

Heterocypris barbara (Gauthier & Brehm, 1928)

Heterocypris salina (Brady, 1868)

Subfamily: Cypridopsinae Kaufmann, 1900

Genus: Cypridopsis Brady, 1867

Cypridopsis vidua (O. F. Müller, 1776)

Cypridopsis elongata (Kaufmann, 1900)

Genus: Sarscypridopsis McKenzie, 1977

Sarscypridopsis aculeata (Costa, 1847)

Genus: Potamocypris Brady, 1870

Potamocypris unicaudata Schaefer, 1943

Potamocypris smaragdina (Vávra, 1891)

Superfamily: Cytheroidea Baird, 1850

Family: Limnocytheridae Klie, 1938

Subfamily: Limnocytherinae Klie, 1938

Genus: Limnocythere s. str. Brady, 1867

Limnocythere inopinata (Baird, 1843)

Genus: Paralimnocythere Carbonnel, 1965

Paralimnocythere relictata (Lilljeborg, 1863)

Family: Cytherideidea Sars, 1925

Subfamily: Cytherideinae Sars, 1925

Genus: Cyprideis Jones, 1857

Cyprideis torosa (Jones, 1850)

Family: Hemicytheridae Puri, 1953

Genus: Tyrrhenocythere Ruggieri, 1955

Tyrrhenocythere amnicola (Sars, 1887)

4.2 Statistical Results

C2 statistical analysis was used to determine the optimum and tolerance levels of the species in the Northern Cyprus using 17 species and two ecological and seven chemical variables (Appendix F).

When the optimum and tolerance values of pH is examined, the highest optimum value is found in *C. torosa* and the smallest optimum value is found in *P. albicans*. In terms of tolerance values, it is understood that *H. chevreuxi* had the highest tolerance value and *I. monstifica* had the smallest tolerance value.

Similarly, optimum and tolerance values of the EC was analysed, *C. torosa* and *I. inermis* showed the highest and lowest optimum values, respectively. *C. torosa* and *P. olivaceus* showed the highest and lowest tolerance values for the EC, respectively.

It is seen that *P. sucki* had the highest optimum value and *H. chevreuxi* had the lowest optimum value for water temperature. It was revealed that *H. chevreuxi* and *I. bradyi* showed the highest and the lowest tolerance values for the water temperature, respectively.

It was revealed that *H. incongruens* and *C. torosa* showed the highest and the lowest tolerance values for the elevation, respectively. The outcome of the elevation indicated that *P. olivaceus* and *C. torosa* showed the highest and the lowest optimum values, respectively.

The optimum and tolerance values of the Na⁺ showed that *S. aculeata* and *P. albicans* had the highest and the lowest tolerance values, respectively. *C. torosa* and *P. olivaceus* showed the highest and lowest optimum values for the Na⁺, respectively.

It is seen that *I. monstifica* had maximum optimum value and *I. decipiens* showed minimum optimum value for Ca^{+2} . It was determined that *I. monstifica* and *P. olivaceus* had the maximum and minimum tolerance values for Ca^{+2} , respectively.

It is determined that *Eucypris* n.sp.2 and *P. albicans* showed the maximum and minimum optimum values for Mg^{+2} , respectively. *I. monstifica* and *P. albicans* had the maximum and minimum tolerance values for Mg^{+2} , respectively.

optimum and tolerance values of the HCO_3^- was analysed, *T. clavata* and *P. sucki* showed the highest and lowest optimum values, respectively. *I. inermis* and *P. olivaceus* showed the highest and lowest tolerance values for HCO_3^- , respectively.

It was revealed that *C. torosa* and *P. olivaceus* had the highest and lowest optimum values for Cl^- , respectively. *C. torosa* and *P. olivaceus* showed that highest and lowest tolerance values for Cl^- , respectively.

According to the ternary plot analyses, among the anions chlorine seems to be dominant ion in the waters (Figure 4.1.) while among the cations sodium predominates (Figure 4.2.). When sodium analysed together with calcium and chlorine, sodium appears to be dominant; however, sodium element appears to play an equal role in with chlorine (Figure 4.3.).

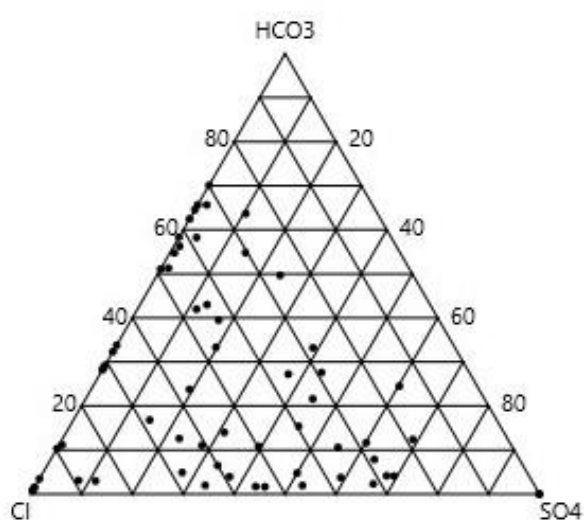


Figure 4.1. Ternary plot analysis of water anions (HCO_3^- , Cl^- , SO_4^{2-}).

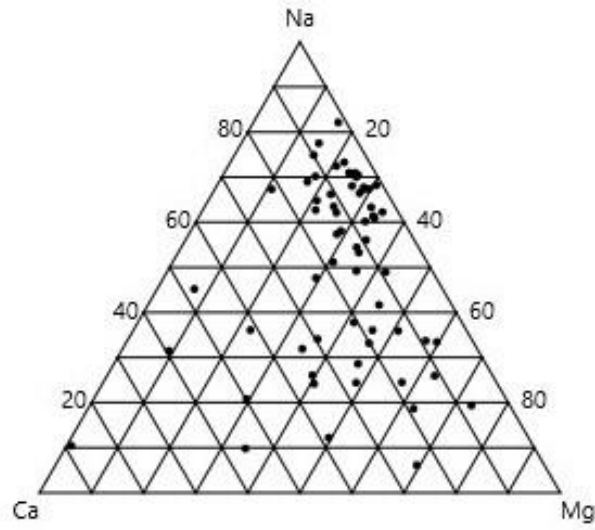


Figure 4.2. Ternary plot analysis of water cations (Na^+ , Ca^{+2} , Mg^{+2}).

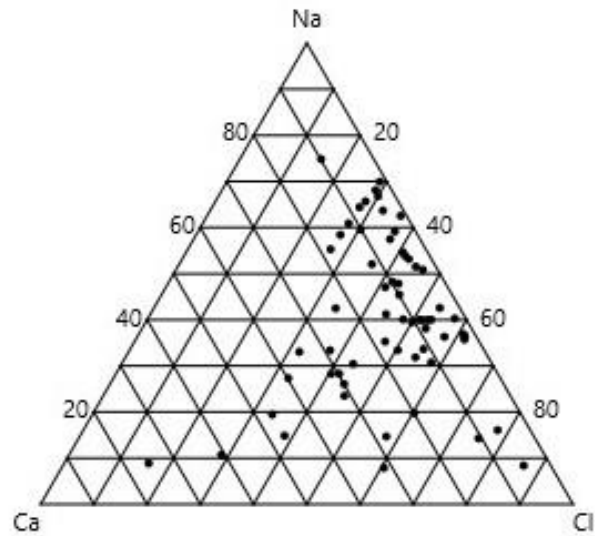


Figure 4.3. Ternary plot analysis of water cations (Na^+ , Ca^{+2}) and anion (Cl^-).

Based on the t-test results with unequal variance at 0.05 critical level (two-tailed), there is no significant difference between the numbers of species of the Cyprus and Mersin (Türkiye) ($P= 0.086$) (Table 4.1.). In this analysis, 29 and 37

species were used from Cyprus and Mersin respectively and 17 species were determined to be common to the two areas.

Table 4.1. Comparison of the numbers of species between Mersin and Cyprus ($p=0.05$) with t-test unequal variance analysis.

t-Test: Two-Sample Assuming Unequal Variances

	<i>Cyprus</i>	<i>Mersin</i>
Mean	0.591836735	0.755102041
Variance	0.246598639	0.18877551
Observations	49	49
Hypothesized Mean Difference	0	
df	94	
t Stat	-1.732050808	
P(T<=t) one-tail	0.043272361	
t Critical one-tail	1.661225855	
P(T<=t) two-tail	0.086544722	
t Critical two-tail	1.985523442	

Based on the data obtained from Canonical Correspondence analyses (Table 4.2.), it explained 64.3 % the relationship between 17 species and five variables (water temperature, pH, Ca^{+2} , Mg^{+2} and EC). As a result of the analysis (Figure 4.4.), the most influential factors on species occurrence are EC ($F=4.032$, $P=0.002$), Mg^{+2} ($F=3.875$, $P=0.002$) and Ca^{+2} ($F=3.381$, $P=0.016$). On the other hand, water temperature ($F=1.813$, $P=0.58$) and pH ($F=1.455$, $P=0.132$) did not show a significant effect.

Table 4.2. CCA summary table with five variables (Tw, pH, Ca⁺², Mg⁺² and EC) and 17 species from the Northern Cyprus (*DCA Results).

Axes	1	2	3	4	Total inertia
Lengths of gradient*:	5.382	4.490	3.614	3.247	
Eigenvalues:	0.441	0.331	0.252	0.128	6.406
Species-environment correlations:	0.793	0.853	0.693	0.665	
Cumulative percentage variance					
of species data:	6.9	12.0	16.0	18.0	
of species-environment relation	36.7	64.3	85.3	96.0	
Sum of all eigenvalues					6.406
Sum of all canonical eigenvalues					1.200

EC, Ca⁺² and Mg⁺² have a significant effect on the occurrence of *C. torosa*, *S. aculeata* and *Eucypris* n. sp.2 (Figure 4.4.). It shows that there is a divergence from high salt tolerance species such as *C. torosa*, *S. aculeata* and *Eucypris* n. sp.2 to moderate salt tolerance species such as *L. inopinata*, *H. incongruens*, moreover then towards freshwater species such as *H. chevreuxi*.

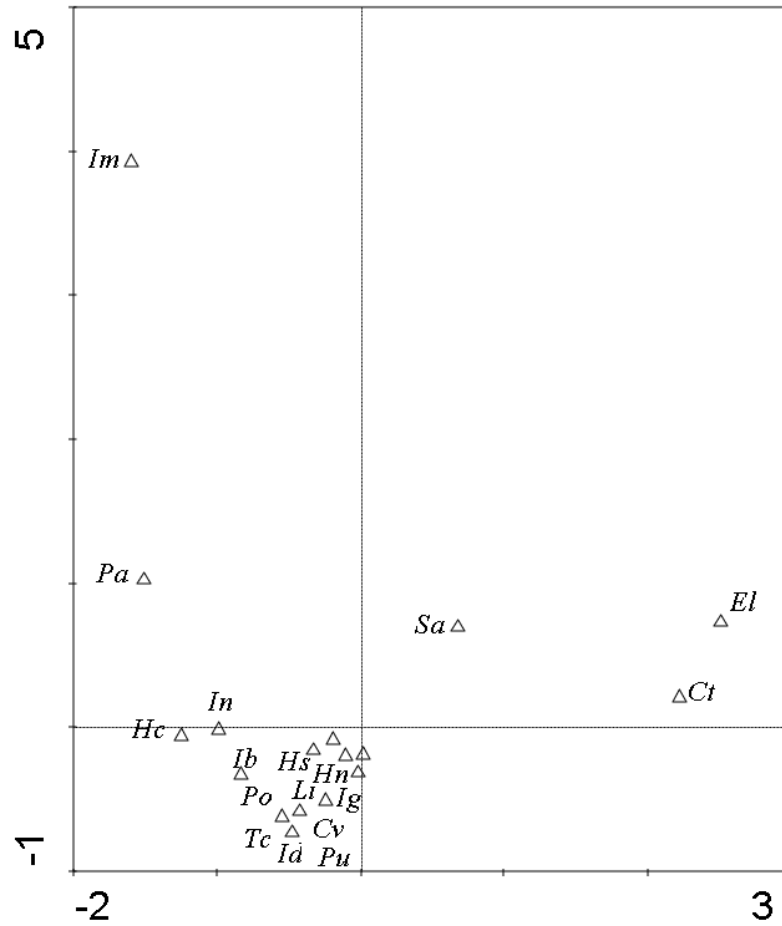


Figure 4.4. The CCA diagram applying five variables shows the distribution of 17 species (*Eucypris* n. sp.2 (El), *C. torosa* (Ct), *C. vidua* (Cv), *H. chevreuxi* (Hc), *H. incongruens* (Hn), *H. salina* (Hs), *I. bradyi* (Ib), *I. decipiens* (Id), *I. inermis* (In), *I. monstifica* (Im), *I. gibba* (Ig), *L. inopinata* (L1), *P. albicans* (Pa), *P. sucki* (Pu), *P. olivaceus* (Po), *S. aculeata* (Sa), *T. clavata* (Tc)).

Sites 7, 9, 10, 11, 47, 48, 49, 50, 59 and 66 were found to have a positive relationship with EC, Mg^{+2} and Ca^{+2} (Figure 4.5.).

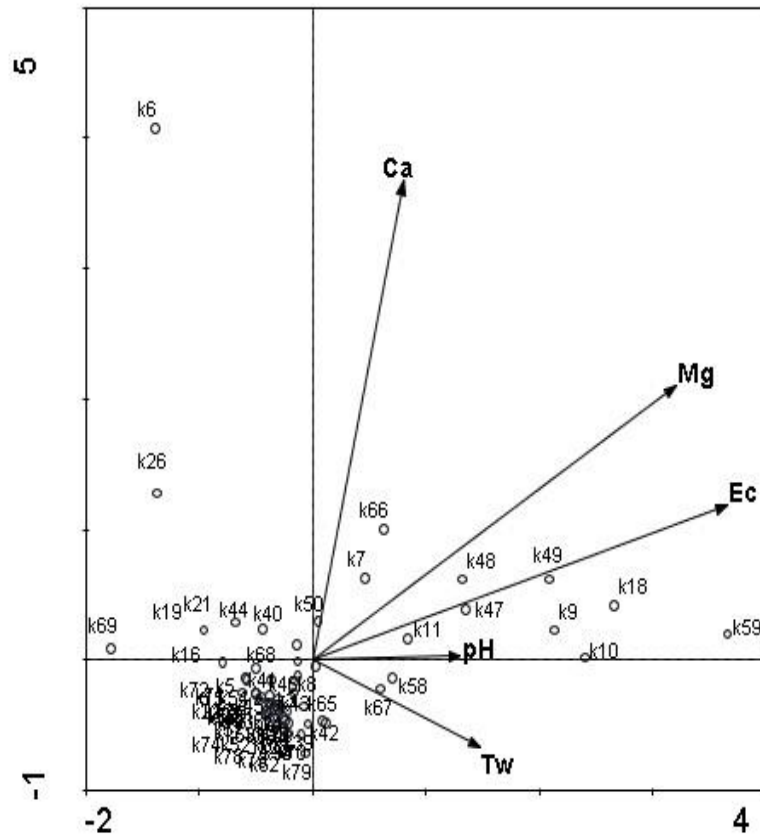


Figure 4.5. The CCA diagram shows the relationship between 62 sites and five variables.

As a summary result of Spearman Rank Correlation analysis (Appendix G), *Eucypris* n. sp.2 ($P < 0.01$) showed a positive significant correlation with EC, Na^{+2} , Mg^{+2} and Cl^{-} . It was revealed that *C. torosa* ($P < 0.05$) showed a positive significant relationship with EC, Na and Ca^{+2} , ($P < 0.01$) a positive significant relationship with Cl^{-} , while ($P < 0.01$) it had a negative significant relationship with elevation. *C. vidua* ($P < 0.05$) figure out that it had positive significant correlation with water temperature. There was negative significant relation between *H. chevreuxi* ($P < 0.05$) and EC. It was understood that there was a negative significant correlation between *H. incongruens* ($P < 0.05$) and water temperature. There was a negative significant correlation between *I. inermis* ($P < 0.05$) and elevation. It was determined that Mg^{+2} had a negative significant correlation with *P. albicans* ($P < 0.05$). It was finally determined that *S. aculeata* ($P < 0.05$) had a positive significant correlation with pH and ($P < 0.01$) a positive correlation with EC, Na^{+} , Ca^{+2} , Mg^{+2} and Cl^{-} .

4.3 Two New Species of the Genus *Eucypris* From the Northern Cyprus

Diagnosis of the genus: In lateral view carapace elliptical. In both posterior and anterior margins of right valve smooth. Both left valve and right valve with a wide inner lamella and a extensive vestibulum. Hinge type adont. If present usually peripheral selvage available. In some of the species' anterior valve surface wart-like elevations could present. Concave anteroventral margin with a rounded enlarged left valve overlapping right valve. Maxillula second segment's palp cylindrical in shape and lengthier than extensive first thoracopod with c-seta. Three segmented third thoracopod with pincer organ. Well developed Uropod without basal triangular structure and Triebel loop (Meisch 2000; Karanovic 2012).

4.3.1 *Eucypris* n. sp.1

Type locality: Temporary creek (35° 12'93.2"N, 033° 10'76.7"E), Yılmazköy district, Lefkoşa, Northern Cyprus.

Holotype: one dissected female collected from type locality on 21 May 2022 by Okan Külköylüoğlu, Ahmet Özdilek and Ali Özdilek. Soft body parts dissected in lactophenol solution and slide mounted and sealed with translucent nail polish (no: OK-CYP1). Valves kept in micropalaeontological cavity slides (no: OK-CYP-V1).

Paratypes (dissected): From type locality six females (no: OK-CYP2-7) were gathered by Okan Külköylüoğlu, Ahmet Özdilek and Ali Özdilek.

Paratypes (non-dissected): Fourty eight females were collected by Okan Külköylüoğlu, Ahmet Özdilek and Ali Özdilek from type locality and preserved in 70% ethanol.

Repository: All paratypes and holotype preserved at the Limnology Laboratory of the Biology Department, Bolu Abant İzzet Baysal University, Bolu, Türkiye.

Measurements (mm). Female (n=7): Length: 1.12-1.32 (mean= 1.22), Height: 0.61-0.78 (mean= 0.71), Width: 0.53-0.63 (mean= 0.58).

Carapace (Figure 4.6.-7.): Ovoid carapace in lateral view and anteriorly beak-shape present in dorsal view. Smooth carapace surface present and wart-like elevations absent. Salvage available in right valve. Inner list of left valve close to the outer margin. Adont hinge type present. In the middle of the carapace greatest

height present. Anterior and posterior site rounded margin exist. Normal pores and setae are present on the valve surface. Left valve > right valve.

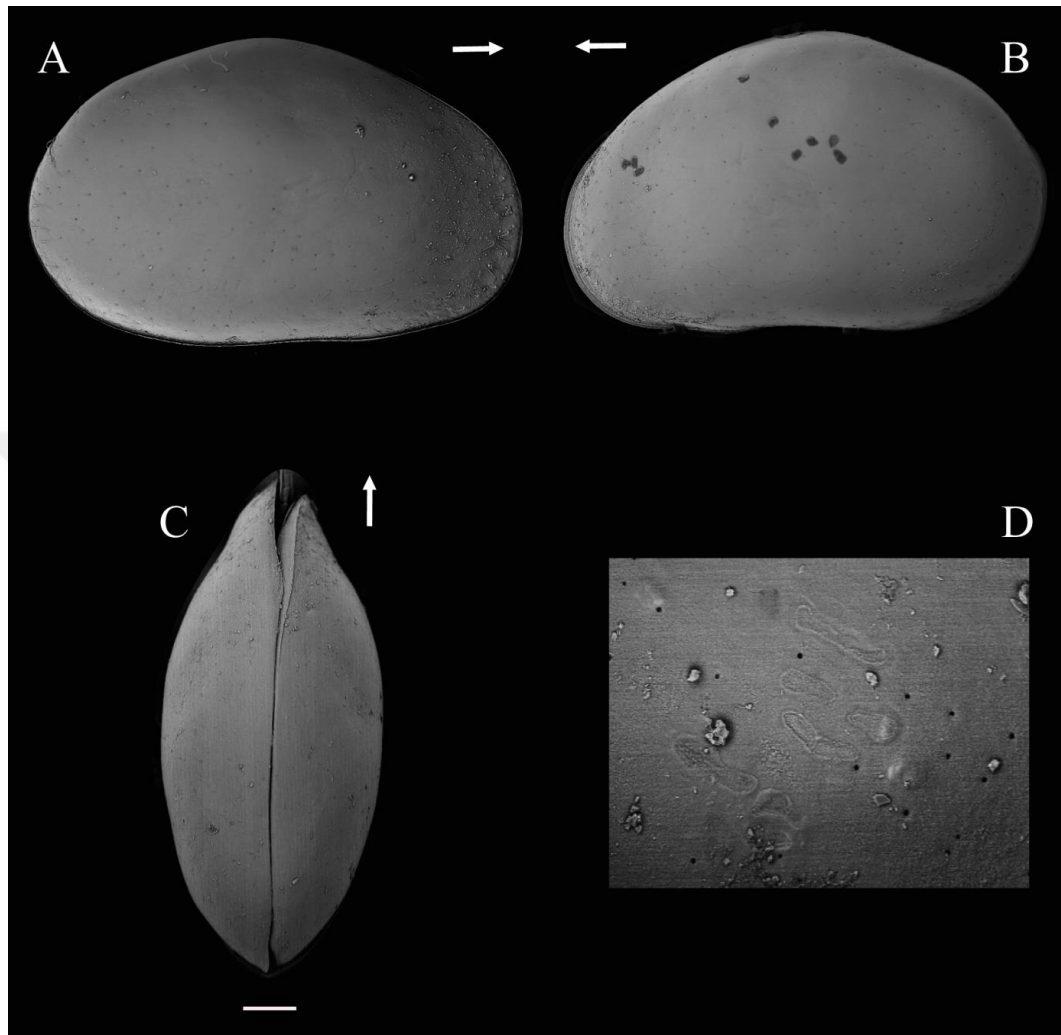


Figure 4.6. *Eucypris* n.sp.1 Female. Right valve: A, external view. Left valve: B, external view. Carapace in dorsal view: C. Muscle scars: D. Scale bar: 133 μm for A and C. 145 μm for B. 94 μm for D. Arrows indicate the anterior site.

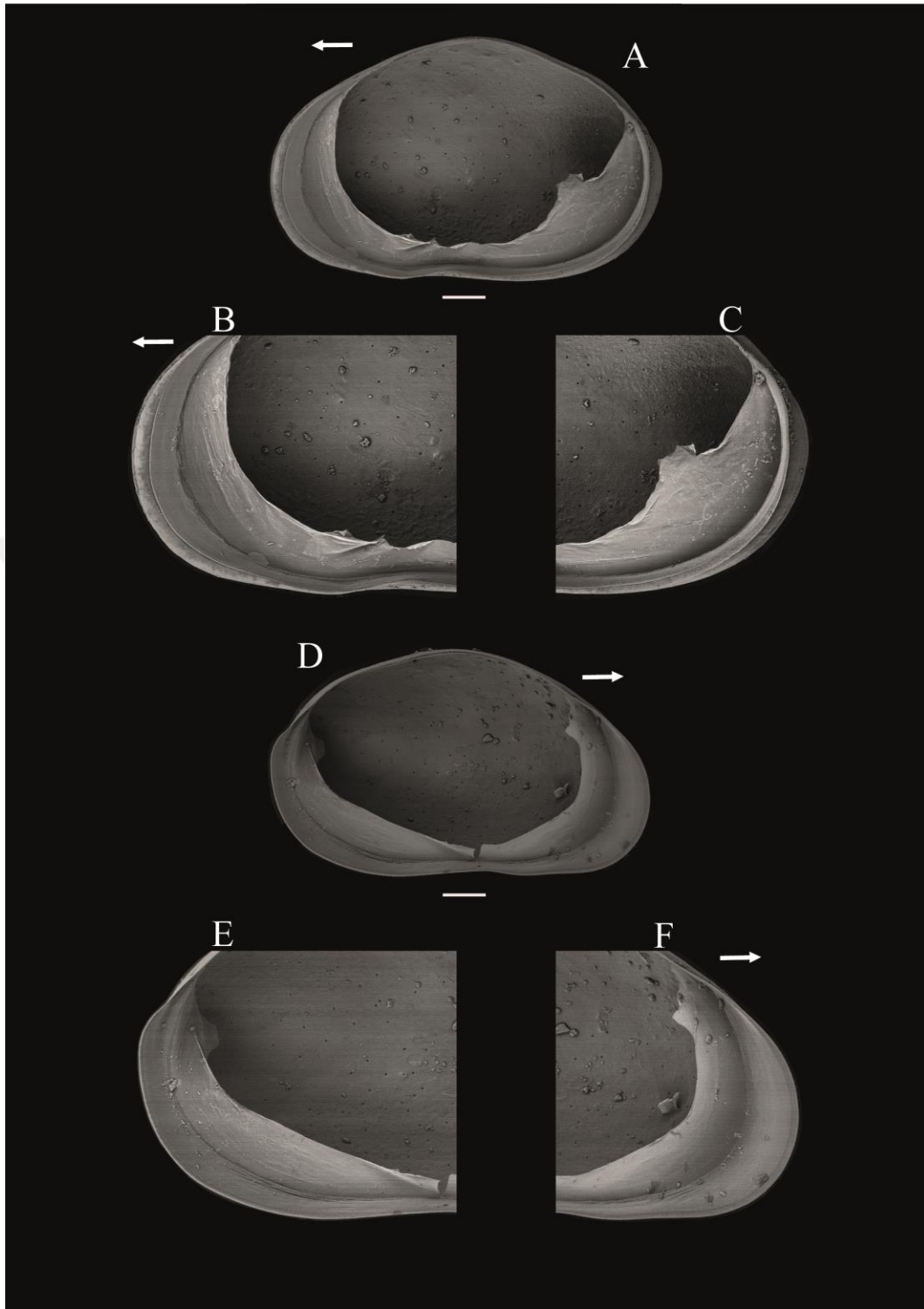


Figure 4.7. *Eucypris* n.sp.1 Female. Right valve: A, internal view. Right valve: B, internal view with extended anterior margin. Right valve: C, internal view with extended posterior margin. Left valve: D, internal view. Left valve: E, internal view with posterior margin enlarged. Left valve: F, internal view with anterior margin extended. Scale bars: 140 μm for A and D. 88 μm for B and C. 100 μm for E and F. Arrows indicate the anterior site.

4.3.2 *Eucypris* n.sp.2

Type locality: Dar Dere, shallow water of a temporary creek, Yılmazköy district, Lefkoşa, Northern Cyprus (35°13'23.9"N 33°10'36.8"E).

Holotype: One dissected female collected from type locality on 21 May 2022 by Okan Külköylüoğlu, Ahmet Özdilek and Ali Özdilek. Soft body parts dissected in lactophenol solution and slide mounted and sealed with translucent nail polish (no: OK-CY1). Valves kept in micropalaeontological cavity slides (no: OK-CY-V1).

Paratypes (dissected): From type locality one female (no: OK-CY2) were collected by Okan Külköylüoğlu, Ahmet Özdilek and Ali Özdilek.

Non-dissected paratypes: Thirty four females kept in 70% ethanol. Gathered from type locality by Okan Külköylüoğlu, Ahmet Özdilek and Ali Özdilek

Other materials: 1) Gazimağusa province: On 19 May 2022, one and two females gathered from coastal region at Glapsides wetlands (35°09'37.4"N 33°54'43.7"E and 35°09'36.1"N 33°54'46.9"E, respectively), 2) Sirinevler district: On 21 May 2022, one female from nameless creek (35°16'24.1"N 33°10'09.9"E), and 3) Yılmazköy district: On 21 May 2022, thirty females from nameless creek (35°12'40"N, 33°10'12"E).

Repository: All paratypes and holotype preserved at the Limnology Laboratory of the Biology Department, Bolu Abant İzzet Baysal University, Bolu, Türkiye.

Measurements (mm). Female (n=7): Length: 1.12-1.32 (mean= 1.22), Height: 0.61-0.78 (mean= 0.71), Width: 0.53-0.63 (mean= 0.58).

Carapace (Figure 4.8.-9.): Color of carapace opaque whitish. Ovoid carapace in lateral view. Left valve > right valve. Left valve with broader inner lamella than right valve. Inner list of left valve close to the outer margin. Salvage located in right valve. Adont hinge type known. In the middle of the carapace greatest height exist. Anterior and posterior site rounded margin present. Carapace smooth and thin setae and normal pores present.

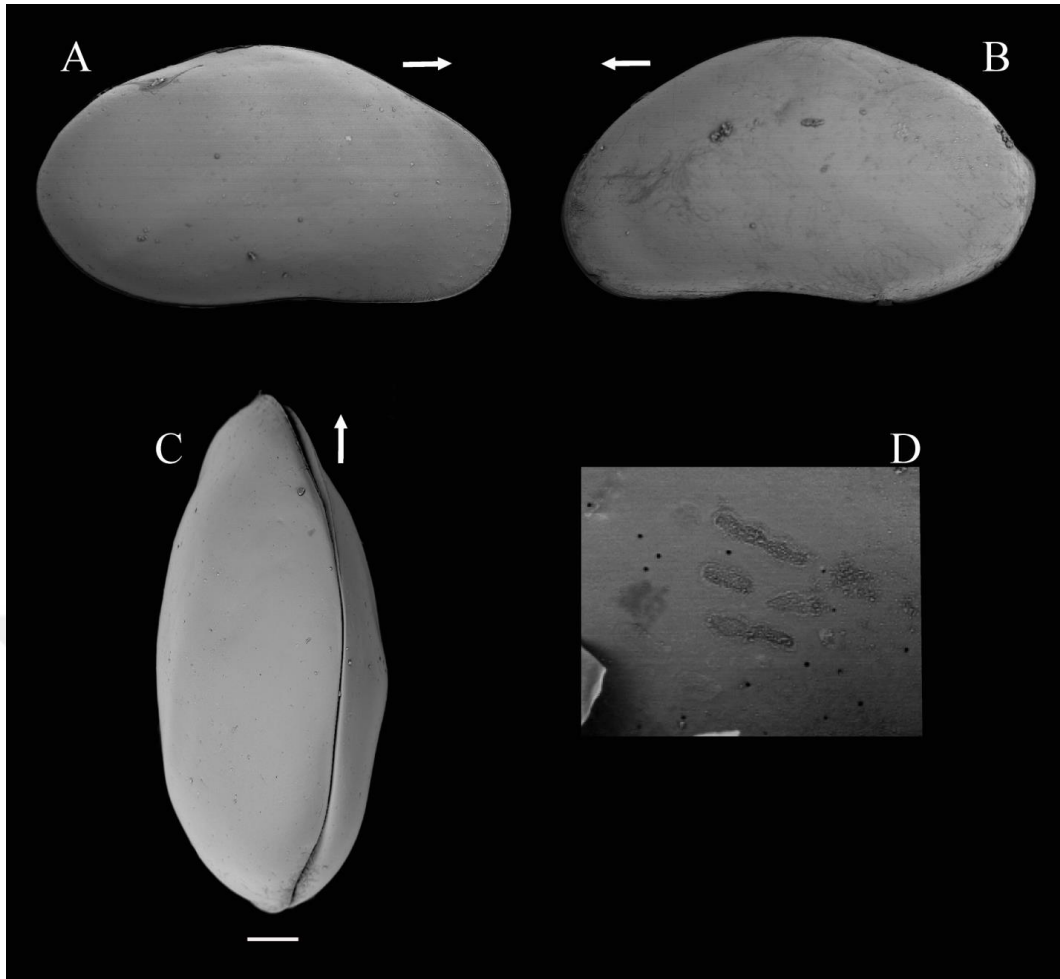


Figure 4.8 *Eucypris* n. sp.2 Female. Right valve: A, external view. Left valve: B, external view. Carapace in dorsal view: C, Muscle scars: D. Scale bar: 200 μm for A and B. 160 μm for C. 53 μm for D. Arrows indicate the anterior site.

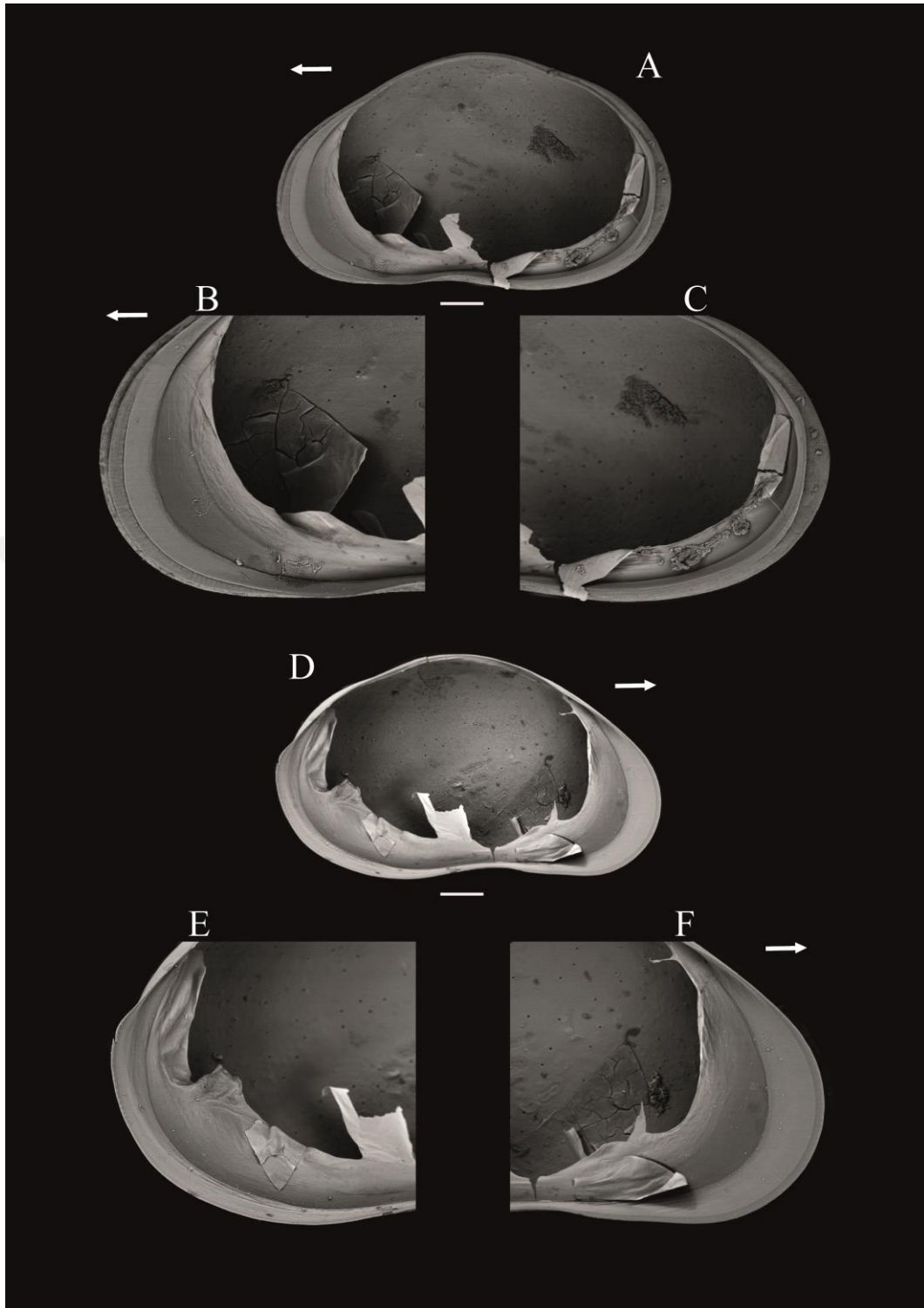


Figure 4.9. *Eucypris* n. sp.2 Female. Right valve: A, internal view. (Right valve: B, internal view with extended anterior margin. Right valve: C, internal view with extended posterior margin. Left valve: D, internal view. E, internal view with posterior margin enlarged. F, internal view with anterior margin extended. Scale bars: 200 μm for A, D and C. 100 μm for B. 133 μm for E and F. Arrows indicate the anterior site.

5. DISCUSSION

The first ostracod study in the island Cyprus was done by Ducloz (1972). He recorded two fossil species (*Candona angulata* and *Herpetocypris reptans*). Subsequently, Manzi et al. (2016) recorded another fossil species (*Cyprideis agregentine*) and added it to the island literature. Polidoro et al. (2021) added one species and taxon (*Heterocypris salina* and *Limnocythere* sp.).

The first living ostracod species on the island were unearthed by a study of Balik et al. (2008), who encountered two species and taxon (*T. clavata*, *C. pubera* and *Eucypris* sp.). Wouters (2017) reported another live species (*C. torosa*) from the island. Our study is the first largest and most comprehensive ostracod study on the islands, with 28 live ostracods (*C. torosa*, *Cy. elongata*, *Cy. vidua*, *Eucypris* n.sp.1, *Eucypris* n. sp.2, *H. brevicaudata*, *H. chevreuxi*, *H. intermedia*, *H. reptans*, *He. barbara*, *He. incongruens*, *He. salina*, *I. bradyi*, *I. decipiens*, *I. inermis*, *I. monstifica*, *I. gibba*, *L. inopinata*, *P. relictata*, *Po. smaragdina*, *Po. unicaudata*, *Ps. albicans*, *Ps. sucki*, *Ph. olivaceus*, *S. aculeata*, *St. major*, *T. clavata* and *Th. amnicola*) which are now added into the ostracod fauna of the island. *H. reptans*, which was identified as a result of a previous paleontological study, was identified alive for the first time during the present study. *H. salina* was re-identified in the Northern Cyprus but first time live individuals were found by this study. Previously found species of *T. clavata* and *C. torosa* were re-identified in this study. *C. pubera*, *C. agregentine* and *C. angulata* species identified in previous studies in the island Cyprus, were not found in the Northern Cyprus. The previously found taxon (*Limnocythere* sp.) was reidentified in this study, and the first species of this genus was described from the Northern Cyprus as a result of this study.

As a results of the analysis (e.g., CCA, C2, Spearman rank correlation), it was understood that “Hypothesis 1: Distribution of ostracod species is not influenced by ecological, environmental and chemical variables (e.g., Ca^{+2} , Mg^{+2} , EC, pH, water temperature, elevation)”, was unacceptable because CCA explained 64.3 % (Table 4.2.), of relationships between species and environmental and chemical variables in the Northern Cyprus. When the effective factors on species distribution were examined, it was seen that the most effective factor was EC,

followed by Mg^{+2} and Ca^{+2} . Similar results were found in the literature studies (e.g., Viehberg, 2006). While water temperature and pH did not have effect on the distribution of species in the island. However, some studies showed the opposite result, showing that water temperature and pH had an effect on distribution (e.g., Klkylođlu and Sarı, 2012; Klkylođlu et al., 2012; Uçak et al., 2014). As a result of CCA analysis (Table 4.2.), it was determined that the species identified on the island distributed from species with high salinity resistance to freshwater forms. The tolerance and optimum values of ostracod species in the Northern Cyprus showed differences (Appendix F). When three widely distributed (most seen) species on the island were examined (such *H. salina*, *C. vidua* and *I. gibba*), it was determined that these species were not showed minimum and maximum optimum and tolerance values for ecological and chemical values. On the other hand, it is known that these species identified from different regions are showed minimum and maximum optimum and tolerance values for ecological and chemical values (e.g., Klkylođlu et al., 2012; Klkylođlu et al., 2016; Klkylođlu et al., 2017; Klkylođlu et al., 2020). While some of the species showed minimum and maximum optimum and tolerance values for ecological and chemical values in the island (e.g., *C. torosa* had the highest optimum and tolerance value for EC was consistent with the CCA analysis, and it was determined that this species was found in a wide EC range. It was determined that *P. olivaceus* had minimum tolerance value to EC, giving similar results in this study as in the study of Klkylođlu (2009)). As a result of C2 analysis, the differences between species in response to variables show that these variables have an effect on species distribution. The fact that species show significant positive and negative relationships with environmental and chemical variables in the correlation analysis (Appendix G) shows that these factors are effective in species distribution and is supportive in showing why the hypothesis cannot be accepted.

Pseudocandona sucki was found from two sampling sites. A pool receiving water from a non-permanent creek and water flowing from a well (this study), swamps, permanent and shallow water sources are the recorded habitats of the species (Meisch, 2000). In C2 results (Appendix F), *P. sucki* had maximum and minimum optimum levels for the water temperature and HCO_3^- , respectively. The species was described for the first time in the Northern Cyprus as a result of this study and makes an important contribution to the separation of the Cyprus from the

other islands examined in this study. Accompanying species: *C. vidua*, *I. gibba*, *H. intermedia* and *H. salina*. Distribution: Cyprus (the present study)

Pseudocandona albicans was found from two sampling sites. It can be found in the temporary and permanent ponds (Meisch and Broodbakker, 1993), subterranean habitats (interstitial ground water of streams, wells and cave waters) (Meisch, 2000), spring and pond (present study). In the CCA analysis (Figure 4.4.), it was determined that the species had negative relationship with the water temperature. In C2 results (Appendix F), *P. albicans* showed lowest optimum value for pH, Mg^{+2} while it reflected lowest tolerance values for Na^{+} and Mg^{+2} . Similarly, correlation analysis (Appendix G) exhibited a negative correlation with Mg^{+2} ($P < 0.05$). The species is a new record for the Cyprus island. Distribution: La Gomera and Tenerife (Canary islands) (Meisch and Broodbakker, 1993), El Hierro (Scharf and Meisch 2014), Sicily (Pieri et al., 2020), Cyprus (this study).

Ilyocypris gibba was third most seen species in the Northern Cyprus and was recorded from 19 sites. It is known as cosmopolitan species (Külköylüoğlu and Vinyard, 2000). It can be found in the river and lake (Broinstein, 1947), reservoir and stream (Malmqvist et al., 1997), oxbow (Külköylüoğlu and Vinyard, 2000), rice fields and low salt water (Meisch, 2000), fountain (Paçal et al., 2017), marsh (Marrone et al., 2019), swamps (Pieri et al., 2020), temporary and permanent ponds, spring pool, dam, creeks, trough (this study). The species is a new record for the island of Cyprus. Distribution: Fuerteventura (Malmqvist et al., 1997), Pag (Marriner et al., 2014), Sardinia (Pieri et al., 2015), Crete (Marrone et al., 2019), Gökçeada (Paçal et al., 2017), Minorca (Mesquita et al., 2020), Sicily (Pieri et al., 2020), Cyprus (the present study).

Ilyocypris monstifica was found from four sampling sites. It has been reported from the littoral zone of lakes (Meisch, 2000), creek (Dalgakıran et al., 2020), ditch and irrigation canal (Akdemir and Külköylüoğlu, 2021), pond, stream and spring water (this study). In C2 conclusions (Appendix F), *I. monstifica* had maximum optimum value for Ca^{+2} and maximum tolerance values for Ca^{+2} and Mg^{+2} while it showed minimum tolerance value for pH. The species was described for the first time in the Cyprus as a result of this study and thus an important contribution was made to the separation of Cyprus from other islands. Accompanying species: *I. gibba*, *I. inermis*, *H. chevreuxi*, *H. incongruens*,

H. barbara, *H. salina*, *C. vidua*, *S. aculeata* and *L. inopinata*. Distribution: Cyprus (the present study)

Ilyocypris decipiens was gathered from three sampling sites. Lake (Bronstein, 1947), impermanent pools, rivers, fountains (Meisch, 2000), trough and ground pool (Pieri et al., 2020), stream, creek, pond (this study) were the types of aquatic bodies that the species has been reported in the literature. In C2 analysis (Appendix F), *I. decipiens* has minimum optimum value for Ca^{+2} . This is the first record of the species from the Cyprus island as a result of this study. Distribution: Sicily and Favignana (Pieri et al., 2020), Cyprus (this study).

Ilyocypris bradyi was collected from two sampling sites. Species is known as cosmoeccious and polythermophilic (Külköylüoğlu, 2013) however, this study revealed that the species does not show a cosmopolitan distribution between the studied islands. Well (Danielopol, 1981), temporary water bodies, oxbows, rivers (Bronstein, 1947), carbonate springs with less water temperature and less mineralization rates (Mezquita et al., 1999), swamp, muddy and sandy substrate (Meisch, 2000), lake (Tadesse, 2011), trough and ground pool (Pieri et al., 2020), pond and stream (this study) were some of the recorded water bodies. With this study, the species was found for the first time on the Cyprus. Distribution: Crete (Klie, 1941, in Marrone et al., 2019), Euboea (Danielopol, 1981), Gran Canaria (Canary Islands) (Malmqvist et al., 1997), Cres and Mljet (Tadesse, 2011), La Gomera and Fuerteventura (Scharf and Meisch, 2014), Sardinia (Pieri et al., 2015), Gökçeada (Paçal et al., 2017), Sicily (Pieri et al., 2020), Cyprus (the present study).

Ilyocypris inermis was collected from six sampling sites. The species is common in cold waters, but is also found in warm waters with low salinity rates (Meisch, 2000; Külköylüoğlu et al., 2010). It has been reported from the ponds fed by springs (Meisch, 2000), irrigation canal, stream (Sarı et al., 2012), spring, reed creek, man-made pool where water from the cave (the present study). Both female and male individuals were recorded in this study. In C2 results (Appendix F), it had the lowest optimum value for EC and had the maximum tolerance value for HCO_3 . Based on data obtained from correlation analysis (Appendix G) negative significant correlation between the species and elevation ($P < 0.05$) were determined. The species is a new record for the Cyprus (present study). Distribution: Sicily (Pieri et al., 2020), Cyprus (the present study).

Trajancypris clavata was collected from four sampling sites. Temporary ponds (Balık et al., 2008; this study), creek, ditch, reservoir and river (Külköylüoğlu et al., 2020), streams, dams and reeds (this study) were the water bodies where the species found. According to the C2 (Appendix F), *T. clavata* had maximum optimum rate for HCO_3^- . Second record of this species was made in the Northern Cyprus (this study). Distribution: Tenerife (Canary islands) (Malmqvist et al., 1997), Sicily (Pieri et al., 2020), Cyprus (Balık et al., 2008; this study).

Herpetocypris reptans was collected from one sampling site. It is cosmoeious species (Külköylüoğlu, 2013). Slow running water and base of lake (Bronstein, 1947), spring (Külköylüoğlu and Vinyard, 2000), river and ditch (Meisch, 2000), stream (Yavuzatmaca, 2022) and creek puddle (this study) were recorded sites. The first description of the species on the island of Cyprus was made by Ducloz (1972) from the paleontology study. As a result of this study, the species was described using soft tissue for the first time in the island. Distribution: Crete (Klie, 1941, in Marrone et al., 2019), Gozo (Baldacchino, 1983), Maltese (Lanfranco, 1996 in Schembri, 2003), Sardinia (Pieri et al., 2015) and Cyprus (Ducloz, 1972; the present study).

Herpetocypris brevicaudata was found from one sampling site. Spring (with warm, oxygenated and carbonated) (Mezquita et al., 1999), rock pool and trough (Pieri et al., 2020) and reeds creek (the present study) were the recorder areas. This study revealed that the species was recorded first time from the island of Cyprus. Distribution: Sicily (Pieri et al., 2020), Sardinia (Pieri et al., 2015), Cyprus (the present study).

Herpetocypris chevreuxi was gathered from five sites. The species was recorded in fresh and brackish waters (Bronstein, 1947), lake (Paçal et al., 2017), trough, reservoir, river and pond (Pieri et al., 2020), creek (Akdemir and Külköylüoğlu, 2021), spring, pool, irrigation canal (this study). This species has a cosmopolitan distribution, with a high tolerance for electrical conductivity (Külköylüoğlu and Sarı, 2012). Negatively significant relationship was determined with EC ($P < 0.05$) (Appendix G). C2 analysis showed that (Appendix F), *H. chevreuxi* had the lowest optimum value for water temperature and had maximum tolerance value for pH and water temperature. According to Meisch (2000), it is often recorded together with the halophilic ostracod species such *C. angulata*, *S. aculeata*, *P. unicaudata* and *C. torosa* and it was determined in the present study

that *H. chevreuxi* was not recorded with these species. It was found and identified for the first time in the Cyprus with this study. Distribution: Crete (Petkowski et al., 2000), Balearic Islands (Moya et al., 2009), Sicily (Pieri et al., 2020), Cyprus (the present study).

Herpetocypris intermedia was collected from one sampling site. The species was found in an man-made pool fed by the stream in the Northern Cyprus. Carbonate springs with less water temperature, less mineralization and less oxygen level (Mezquita et al., 1999), rivers and ditches (Meisch, 2000), fountain and lake (Külköylüoğlu et al., 2012), creek (Akdemir and Külköylüoğlu, 2021) were recorded sites in literature. The species was identified for the first time in the Cyprus as a result of this study. As a result of this identification, it was defined as one of the species that played a role in the separation of Cyprus from other islands. Accompanying species: *H. salina* and *C. vidua*. Distribution: Cyprus (the present study).

Psychrodromus olivaceus was collected from two sampling sites. It is known as a cosmopolitan species (Yavuzatmaca, 2019). It was found in pools fed by spring water coming from caves in the Northern Cyprus (the present study). Spring waters (Nagorskaya and Keyser, 2005), cool waters with low salinity rates (Külköylüoğlu, 2009) were recorded water sources. In this study, the presence of the species in water bodies where the water temperatures were 16.64 °C and 26.69 °C and the salinity were 0.38 and 0.51 is a result that supports the low salinity mentioned in the Külköylüoğlu (2009) directly and relatively to the low water temperature. According to the C2 results (Appendix F), *P. olivaceus* showed the maximum optimum value for elevation and the minimum optimum values for Na⁺ and Cl⁻. It had the minimum tolerance rates for EC, Ca⁺², Cl⁻ and HCO₃⁻. *P. olivaceus* is new recorded for the Cyprus (the present study). Distribution: Sardinia (Pieri et al., 2015), Gökçeada (Paçal et al., 2017), Cyprus (this study).

Stenocypris major was collected from one sampling site. According to the Meisch et al. (2019) the species is cosmopolitan and our results proved that the species is the most widely distributed species among 156 islands outside the Mediterranean (Appendix L). The species was identified from well (Broodbakker, 1983b), pool and pond (Broodbakker, 1983d and this study), ditch, stream, rice field and spring (Broodbakker, 1988). It is the new record for the Cyprus (present study). Distribution: Sri Lanka (Mendis and Fernando, 1962), Euboea (Danielopol, 1981),

Haiti and Barbados (Broodbakker, 1983a), St. Martin and Cuba (Broodbakker, 1983b), St. Croix, US Virgin Islands, Martinique, Antigua, Curacao, Banaire, Aruba, Puerto Rico, Marie Galante and Guadelope (Broodbakker, 1983d), Margarita, La Desirade, Eleuthera and Montserrat (Broodbakker, 1984a), St. Vincen (Harrison and Rankin, 1976 in Broodbakker, 1984a), Okinawa, Yoron, Tokunoshima and Okinoerabu-Shima (Broodbakker, 1988), Jamaica (Holmes, 1997), Futuna and Wallis (Meisch et al., 2007), Sardinia (Pieri et al., 2015), New Caledonia (Martens et al., 2019) and Hainan (Ma and Yu, 2020), Cyprus (the present study).

Heterocypris incongruens was collected from 17 sampling sites. The species is known as a cosmopolitan species (Dumont and Martens, 1996) and among the 32 Mediterranean islands, is the first most distributed species together with *C. torosa* (Appendix J). It has been recorded in many kinds of water bodies (e.g., ditches (Külköylüoğlu and Vinyard, 2000), artificial reservoir (Pieri et al., 2020), backwater, spring, temporary puddle in rock hole, dam, stream, creek and marine (this study). It colonizes abundantly in eutrophic ponds with low oxygen (Meisch, 2000) such eutrophic pool in Easter island (Dumont and Martens, 1996). Based on the C2 analysis (Appendix F), the species had the maximum tolerance value for elevation. Although there was a negative significant relationship between *H. incongruens* and water temperature ($P < 0.05$) in the correlation analysis (Appendix G), a positive significant relationship was determined between water temperature and *H. incongruens* in the study of Akdemir et al. (2016). The species was recorded for the first time in the Cyprus with this study. Distribution: Margarita (Margalef, 1961) Okinawa (Broodbakker, 1988), Jeju, Wonsan, Yongjong, Togjok and Seonyu (Kim and Min, 1991b), Hateruma (Okubo and Terauchi, 1992), Easter (Dumont and Martens, 1996), La Gomera, Tenerife and Fuerteventura (Malmqvist et al., 1997), Linosa (Bellavere et al., 1999, in Bellavere et al., 2002), Crete (Petkoski et al., 2000), El Hierro and Gran Canaria (Scharf and Meisch, 2014), Sardinia (Pieri et al., 2015), Gökceada (Paçal et al., 2017), Vulcano, Ustica, Sicily, Levanzo, Favignana, Pantelleria and Lampedusa (Pieri et al., 2020) and Cyprus (the present study).

Heterocypris barbara was collected from one sampling site. Persistent and provisional water bodies (Meisch, 2000), ground pool and mud puddle (Marrone et al., 2019), pond (this study) were recorded sites. The species was recorded for the

first time in the Cyprus with this study. Distribution: Sicily (Pieri et al., 2015), Crete (Marrone et al., 2019), Cyprus (the present study).

Heterocypris salina was the most abundant species in the Cyprus and recorded from 27 sites. It is a cosmopolitan species (Malmqvist et al., 1997) and known to favor to live in inland waters, slightly salty coastal waters and pure fresh waters (Meisch and Broodbakker, 1993). Spring (Külköylüoğlu and Vinyard, 2000), lagoon (Paçal et al., 2017), trough, fountain, dam, stream, creek, pond, pool (this study) were some of the recorded sites of the species. As a result of this study, it was determined that this species had a wide salinity range (0.34-20.63) throughout the island. Although the species had been found in the Cyprus before, living individuals were found for the first time as a result of this study. Distribution: Tenerife (Meisch and Broodbakker, 1993), Azores (Beyer et al., 1997), Fuerteventura (Malmqvist et al., 1997), Crete (Petkoswki et al., 2000), Mljet (Tadesse, 2011), La Gomera and Gran Canaria (Scharf and Meisch, 2014), Jeju (Smith et al., 2015), Sardinia (Pieri et al., 2015), Gökçeada (Paçal et al., 2017), Linosa (Revelles et al., 2019), Sicily (Pieri et al., 2020), Cyprus (Polidorou et al., 2021; this study).

Cypridopsis vidua was the second most frequent species in the Cyprus and recorded from 22 sampling sites. This species is known as a cosmopolitan species (Meisch and Broodbakker, 1993) and has cosmoecius characters (Külköylüoğlu, 2013). Among the Mediterranean and non-Mediterranean islands the present study revealed that the *C. vidua* was the third most seen species (Appendix J, L). It can be found in the creek (Paçal et al., 2017), reservoir (Pieri et al., 2020), stream (Akdemir and Külköylüoğlu, 2021), lake (Külköylüoğlu, 2023), pond, backwater, spring, pool, dam, dram well flood water and marine (this study). It is resistant species against increases in salt concentration (Meisch and Broodbakker, 1993) and in the present study the salinity rate of the ephemeral water pool and marine sites were 42.04 and 35.33 respectively in the Northern Cyprus, that showed again the resistance of this species to the salt concentration was high. Correlation analysis showed that (Appendix G) species had a possitive significant relationship with elevation ($P < 0.05$). The species, was discovered for the first time with this study and is a new record for the Cyprus. Distribution: New Zealand (Barclay, 1968), St. Vincen (Harrison and Rankin, 1976 in Broodbakker, 1984a), La Gomera, Fuerteventura, La Palma and El Hierro from the Canaria islands (Meisch and

Broodbakker, 1993), Azores (Beyer et al., 1997), Hawaii (Eldredge and Miller, 1997), Jamaica (Holmes, 1997), Futuna and Wallis (Meisch et al., 2007), Cres and Mljet (Tadesse, 2011), Martin Garcia Island (Liberto et al., 2012), Gran Canaria (Scharf and Meisch, 2014), Jeju (Smith et al., 2015), Sardinia (Pieri et al., 2015), Gökçeada (Paçal et al., 2017), Crete (Marrone et al., 2019), Sicily, Lipari, Favignana and Pantelleria (Pieri et al., 2020), Hainan (Ma and Yu, 2020), Cyprus (the present study).

Cypridopsis elongata was collected from one site. The species has been recorded in a pond (Marrone et al., 2019; this study), reservoir, well, swamp (Pieri et al., 2020). This species is a new record for the Cyprus (present study). Distribution: Sardinia (Pieri et al., 2015), Crete (Marrone et al., 2019), Sicily (Pieri et al., 2020), Cyprus (the present study).

Sarscypridopsis aculeata was found from 16 sampling sites. It is a cosmopolitan species and a salt-tolerant freshwater species (Meisch and Broodbakker, 1993), in this study, it was determined that it lived in high salinity range (e.g., ephemeral pool and marine with salinity ranges were 42.04 and 35.33 respectively). Temporary or permanent water bodies, including coastal rock pools and ponds under the influence of sea water (Meisch, 2000), well, trough, reservoir, river, swamp, lake, rock pool and ground pool (Pieri et al., 2020), pond, dam, stream, creek, brackish pool, wetland and marine (this study) were some of the water bodies where the species recorded. According to the C2 (Appendix F), *S. aculeata* had the maximum tolerance value for Na^+ . A significant effect of Ca^{+2} , Mg^{+2} and EC on *S. aculeata* was found in CCA analysis (Figure 4.4.). Similarly, correlation analysis (Appendix G) revealed a positive significant correlation between EC, Ca^{+2} , Mg^{+2} , Cl^- ($P < 0.01$), pH ($P < 0.05$) and the species. The species was recorded for the first time in the Cyprus with this study. Distribution: Fuerteventura (Meisch and Broodbaker, 1993), Balearic islands (Moya et al., 2009), El Hierro (Scharf and Meisch, 2014), Sardinia (Pieri et al., 2015), Crete (Marrone et al., 2019), Minorca (Mesquita et al., 2020), Vulcano and Sicily (Pieri et al., 2020), Cyprus (the present study).

Potamocypris unicaudata was found from one sampling site. Mildly brackish waters moreover pure fresh water sources (Meisch 2000) were preferred water sources by *P. unicaudata*. The species was recorded in stream (Akdemir and Külköylüoğlu, 2011), permanent and temporary stagnant water bodies (Coviaga et

al., 2018) and dam (this study). As stated by Meisch (2000), the species was recorded together with the halophilic ostracod of both *H. salina* and *H. chevreuxi* or only one and in the present study, *P. unicaudata* was found together with *H. salina*. The species was described for the first time on the island of Cyprus with this study. As a result, it made a significant contribution to distinguishing the island of Cyprus from the other islands examined in this study. Accompanying species: *C. vidua*, *H. salina*, *H. incongruens*, *I. gibba*, *P. unicaudata*, *S. acuelata* and *T. clavata*. Distribution: Cyprus (the present study).

Potamocypris smaragdina was collected from one sampling site. The species has been reported from the littoral zone of the lakes (Meisch, 2000), spring (Cusminsky et al., 2005), pond (Ghaouaci et al., 2017), permanent stagnant water bodie (Coviaga et al., 2018), stream (Yavuzatmaca, 2022) and pool (this study). *P. smaragdina* is recorded for the first time in the Cyprus with this study. Distribution: Sardinia (Pieri et al., 2015), Cyprus (the present study).

Limnocythere inopinata was collected from four sampling sites. The species is called as a cosmopolitan (Yılmaz and Külköylüoğlu, 2006) and cosmoeious species (Külköylüoğlu et al., 2014). The species preferred to live in fresh waters, marine with low salinity and brackish waters, lake and river (Bronstein, 1947), reservoir (Malmqvist et al., 1997), rice field (Meisch, 2000), fountain (Paçal et al., 2017), swamp (Pieri et al., 2020), pond (this study). Although the first record of taxon was made in the Cyprus by Politro et al. (2021), the first species identification of this genus was made with this study, and *L. inopinta* was described for the first time from the island of Cyprus as a result of this study. Distribution: Fuerteventura (Malmqvist et al., 1997), Vaigach and Novaya Zemlya Archipelagos (Semenova, 2003 in Bespalaya et al., 2021), Sardinia (Pieri et al., 2015), Gökçeada (Paçal et al., 2017), Sicily (Pieri et al., 2020), Cyprus (the present study).

*Paralimnocythere relict*a was found from one sampling sites. It can be found in the the littoal zone of lakes, pools and ditches (Meisch, 2000) and trough (this study). The species was recorded for the first time in the Cyprus. Among the islands examined in this study, the species was identified for the first time in the Cyprus (the present study). Accompanied species: *H. salina* and *I. gibba*. Distirbution: Cyprus (the present study).

Cyprideis torosa was collected from the nine sampling sites. it was revealed that the most common species among the Mediterranean islands were both *C. torosa*

and *H. incongruens* (Appendix J). Brackish spring water with high temperatures, high sulfate concentrations and high chlorine (Mezquita et al., 1999), fountain (Paçal et al., 2017), lake (Pieri et al., 2020), river, creek, irrigation canal (Akdemir and Külköylüoğlu, 2021), marine, stream, pond, spring (this study) are some of the recorded water boies. According to the C2 (Appendix F), *C. torosa* had the maximum optimum values for pH, EC, Na⁺, Cl⁻ and it had the maximum tolerance values for EC and Cl⁻. Based on the correlation analaysis (Appendix G), *C. torosa* showed positive significant relationship with EC, Na⁺, Ca⁺² ($P < 0.05$) and Cl⁻ ($P < 0.01$), while negative significant relationship with elevation ($P < 0.01$). On the other hand *C. torosa* had the both minimum optimum and tolerance values for elevation. In the CCA analysis (Figure 4.4.), it was determined that EC, Mg⁺² and Ca⁺² had significant effect on *C. torosa*. The correlation analysis supported the CCA analysis and revealed the effect of EC and Ca⁺² on the *C. torosa*. During this study, second record of the species on the Cyprus was done. Distribution: Corfu (Stephanides, 1948, in Kempf, 2016), Minorca and Ibiza (Margalef, 1952, in Kempf, 2016), Fuerteventura (Malmqvist et al., 1997), Silhouette (Wouters, 2002), Balearic Islands (Moya et al., 2009), Mljet (Tadesse, 2011), Socotra (Mohammed et al., 2013), Gran Canary (Scharf and Meisch, 2014), Pag (Marriner et al., 2014), Sardinia, Maltase and Naxos (Wouters, 2017), Cyprus (Wouters, 2017; the present study), Gökçeada (Paçal et al., 2017), Sicily (Pieri et al., 2020).

Tyrrhenocythere amnicola (Sars, 1887) was gathered from one sampling site. It is called a brackish water species (Maness and Kaesler, 1987) and Gülen and Altınsaçlı (1999) also stated that the species distributed to the freshwater and marine. Stream and river (Gülen and Altınsaçlı, 1999), rock pool (Pieri et al., 2020) and marine (this study) were some of the water bodies where the species found. It is a new record for the Cyprus (the present study). Distribution: Sicily (Pieri et al., 2020), Cyprus (the present study).

5.1 Ostracoda Distribution Among the Cyprus and Mersin

As a result of the literature researches, 37 ostracod species belonging to 19 genera living today in Mersin province were determined (Appendix H). When compared with 29 species belonging to 16 genera in the island of Cyprus (diagnosed only from living individuals and 28 species from this study and *Cypris pubera* from Balık et al., 2008), it is understood that 17 species belonging to 10 genera were common, 12 species belonging to 10 genera only in the Cyprus and 20 species

belonging to 13 genera only in Mersin were determined (Figure 5.1.). After t-test results (Table 4.1.), it was understood that "Hypothesis 2: There is no significant difference between the Cyprus and Mersin ostracod species diversity" was accepted. The fact that extensive Ostracoda studies have been carried out in Mersin in the past and the water transport methods to the island from Mersin were effective in choosing it.

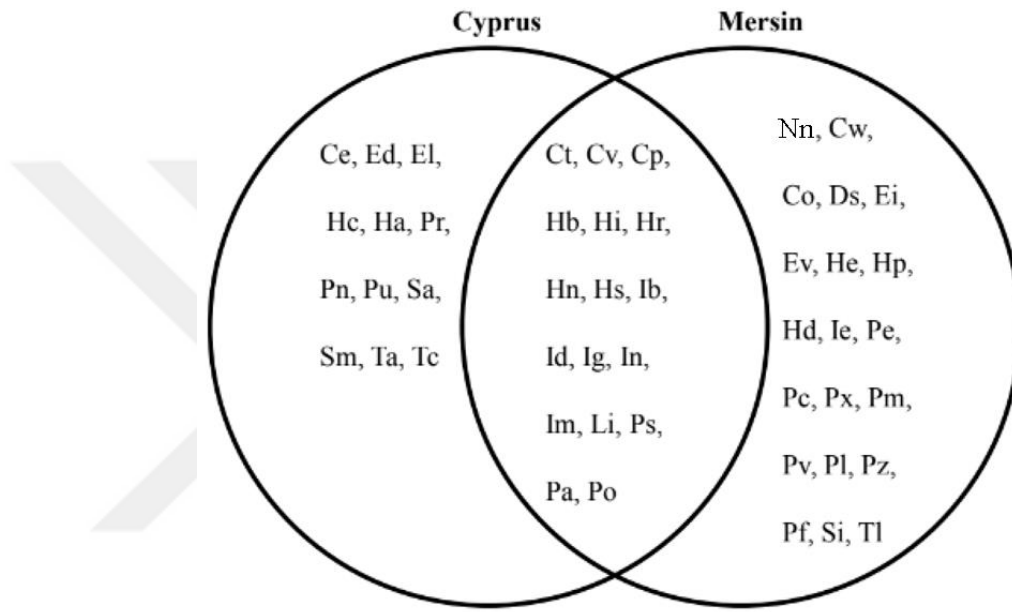


Figure 5.1. Shared and unique ostracod species from the Cyprus and Mersin (Türkiye). Abbreviations: *N. neglecta* (Nn), *C. weltneri* (Cw), *C. ophtalmica* (Co), *C. torosa* (Ct), *C. elongata* (Ce), *C. vidua* (Cv), *C. pubera* (Cp), *D. stvensoni* (Ds), *E. inflata* (Ei), *Eucypris* n. sp.1 (Ed), *Eucypris* n. sp.2 (El), *E. virens* (Ev), *H. brevicaudata* (Hb), *H. chevreuxi* (Hc), *H. helenae* (He), *H. intermedia* (Hi), *H. reptans* (Hr), *H. barbara* (Ha), *H. incongruens* (Hn), *H. reptans* (Hp), *H. rotundata* (Hd), *H. salina* (Hs), *I. bradyi* (Ib), *I. decipiens* (Id), *I. inermis* (In), *I. monstifica* (Im), *I. gibba* (Ig), *I. beauchampi* (Ie), *L. inopinata* (Li), *P. relicta* (Pr), *P. newtoni* (Pe), *P. arcuata* (Pc), *P. fallax* (Px), *P. similis* (Pm), *P. smaragdina* (Ps), *P. unicaudata* (Pn), *P. variegata* (Pv), *P. villosa* (Pl), *P. zenkeri* (Pz), *P. albicans* (Pa), *P. sucki* (Pu), *P. fontinalis* (Pf), *P. olivaceus* (Po), *S. aculeata* (Sa), *S. intermedia* (Si), *S. major* (Sm), *T. lutaria* (Tl), *T. clavata* (Tc), *T. amnicola* (Ta).

5.2 Non-Marine Ostracoda From the Mediterranean and Non-Mediterranean Islands

In the light of the information obtained from this study and the literature researches, it was determined that non-marine ostracod studies were carried out in 37 Mediterranean islands. From the Mediterranean islands total of 45 taxa and 108 species were determined (Appendix I). When these 37 islands were examined in deep, it was determined that 46 genera and 104 species from 32 islands were diagnosed using living individuals (diagnostics from the valves, carapace, cf. and sp. excluded) and *C. torosa* and *H. incongruens* was determined as the most widely distributed species with 12 different islands recorded, followed by *C. vidua* found from 10 islands and *E. virens* with identified from nine different islands (Figure 5.2.). The Sicily was determined as the island with the most species with 45 species. After the Sicily, the highest number of ostracod species were found in the Sardinia with 40 species and both the Cyprus and the Crete were determined as the islands with the third highest numbers of species with 29 species in total (Appendix J, Figure 5.3.).

As a result of the literature researches covering islands outside the Mediterranean, it was determined that non-marine ostracod studies were carried out on 159 islands (including archipelagos). Total of 37 taxa and 284 species have been described from these islands (Appendix K). When these islands were examined more closely, it was determined that 89 genera and 281 species from 156 islands were described using living individuals (diagnostics from the valves, carapace, cf. and sp. excluded) and among the these species *S. major* was identified as the species with the widest distribution, which was identified in 28 different locations, followed by *N. inaudita*, *P. hummelincki* and *S. longula* identified in 16 different locations, as the species with the second widest distributions, and *C. vidua* recorded at 15 different locations, was determined as the species with the third widest distribution (Figure 5.2.). The island with the highest number of species was identified as the Jeju with 28 species, followed by the New Zealand with 26 species and the island of Jamaica with 23 species (Appendix L, M).

When the species identified from the Mediterranean and non-Mediterranean islands were compared (considering only living species), it was revealed that 34 species were common between these two regions (Table 5.1.).

After dividing the 32 Mediterranean islands and 156 non-Mediterranean islands as north and south on the equator plane, it was revealed that 136 islands were in the northern hemisphere and 52 islands were in the southern hemisphere (Figure 5.4.). It was revealed that there were a total of 256 ostracod species from 136 islands in the northern hemisphere, while it was determined that there were 121 ostracod species from 52 islands in the southern hemisphere. When the islands in the northern and southern hemispheres were sorted according to the tropics of Cancer and Capricorn, it turned out that there were 110 species from 63 islands in the tropic of Cancer and 82 species from 32 islands in the tropic of Capricorn. It is understood that 26 ostracod species are common in the northern and southern hemispheres (Table 5.2.), and 16 of these are common between species in the tropics of Cancer and Capricorn (Table 5.3.).

As a result of the study (considering only living species), 351 non-marine species from 188 islands were identified .

The difference in the number of species found in the northern hemisphere and southern hemisphere islands reveals that “Hypothesis 3: There is no difference between the number of species from the islands located on the north and south of the equator” was not acceptable. The greater number of studied islands in the northern hemisphere may reflect that the number of species found is higher in the northern hemisphere (Figure 5.4.). Although we did not analyze this in this study, it is stated that the number of species could increase as the number of sites sampled increases, according to the "sampling effect", which is one of the past studies and conducted by Hill et al. (1994). However, some studies do not support this approach (e.g., 13 and 18 living species were identified respectively from total of 70 sites in Bartın and Zonguldak provinces (Türkiye) (Külköylüoğlu et al., 2017), 26 living species were identified from 55 sites in Aksaray province (Türkiye) (Külköylüoğlu et al., 2024)). Although the fact that ostracod studies have been conducted on more islands in the northern hemisphere seems to support this approach at first, but it would not be right to accept this approach. Because when the number of species per island is examined, islands in the southern hemisphere (2.32) had more species per island than northern islands (1.88).

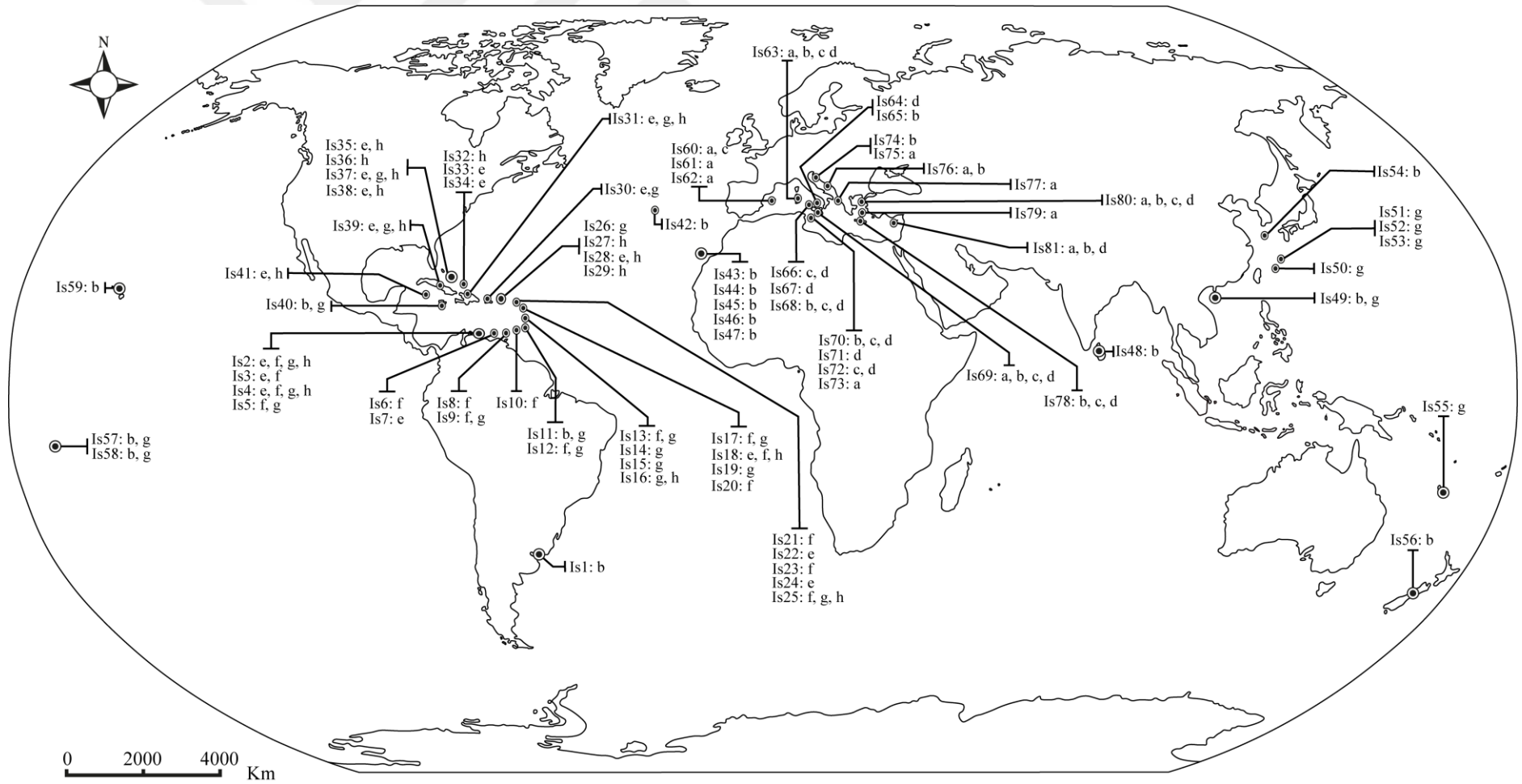


Figure 5.2. Distribution of the most common eighth species. Abbreviations:
a: *C. torosa*, b: *C. vidua*, c: *E. virens*, d: *H. incongruens*, e: *N. inaudita*, f: *P. hummenlicki*, g: *S. major*, h: *S. longula*. Island abbreviations: 1: Martin Garcia, 2: Curacao, 3: Klein Curacao, 4: Bonaire, 5: Aruba, 6: La Blanquilla, 7: La Tortuga, 8: Los Testigos, 9: Margarita, 10: Grenada, 11: St. Vincen, 12: Barbados, 13: Martinique, 14: Marie Galante, 15: Guadeloupe, 16: La Desirade, 17: Antigua, 18: St. Eustatius, 19: Montserrat, 20: Barbuda, 21: Nevis, 22: St. Barthelemy, 23: St. Kitts, 24: Anguilla, 25: St. Martin, 26: St. Croix, 27: Tortola, 28: Anegada, 29: Culebra, 30: Puerto Rico, 31: Dominican, 32: Providenciales, 33: South Caicos, 34: Inagua, 35: Crooked, 36: San Salvador, 37: Eluethera, 38: Mayaguana, 39: Cuba, 40: Jamaica, 41: Grand Cayman, 42: Azores, 43: Grand Canaria, 44: La Gomera, 45: Fuerteventura, 46: La Palma, 47: El Hierro, 48: Sri Lanka, 49: Hainan, 50: Okinawa, 51: Yoron, 52: Tokunoshima, 53: Okinoerabu-Shima, 54: Jeju, 55: New Caledonia, 56: New Zealand, 57: Wallis, 58: Futuna, 59: Hawaii, 60: Balearic islands, 61: Minorca, 62: Ibiza, 63: Sardinia, 64: Vulcano, 65: Lipari, 66: Ustica, 67: Levanzo, 68: Favignana, 69: Sicily, 70: Pantelleria, 71: Linosa, 72: Lampedusa, 73: Maltese, 74: Cres, 75: Pag, 76: Mljet, 77: Corfu, 78: Crete, 79: Naxos, 80: Gökçeada, 81: Cyprus.

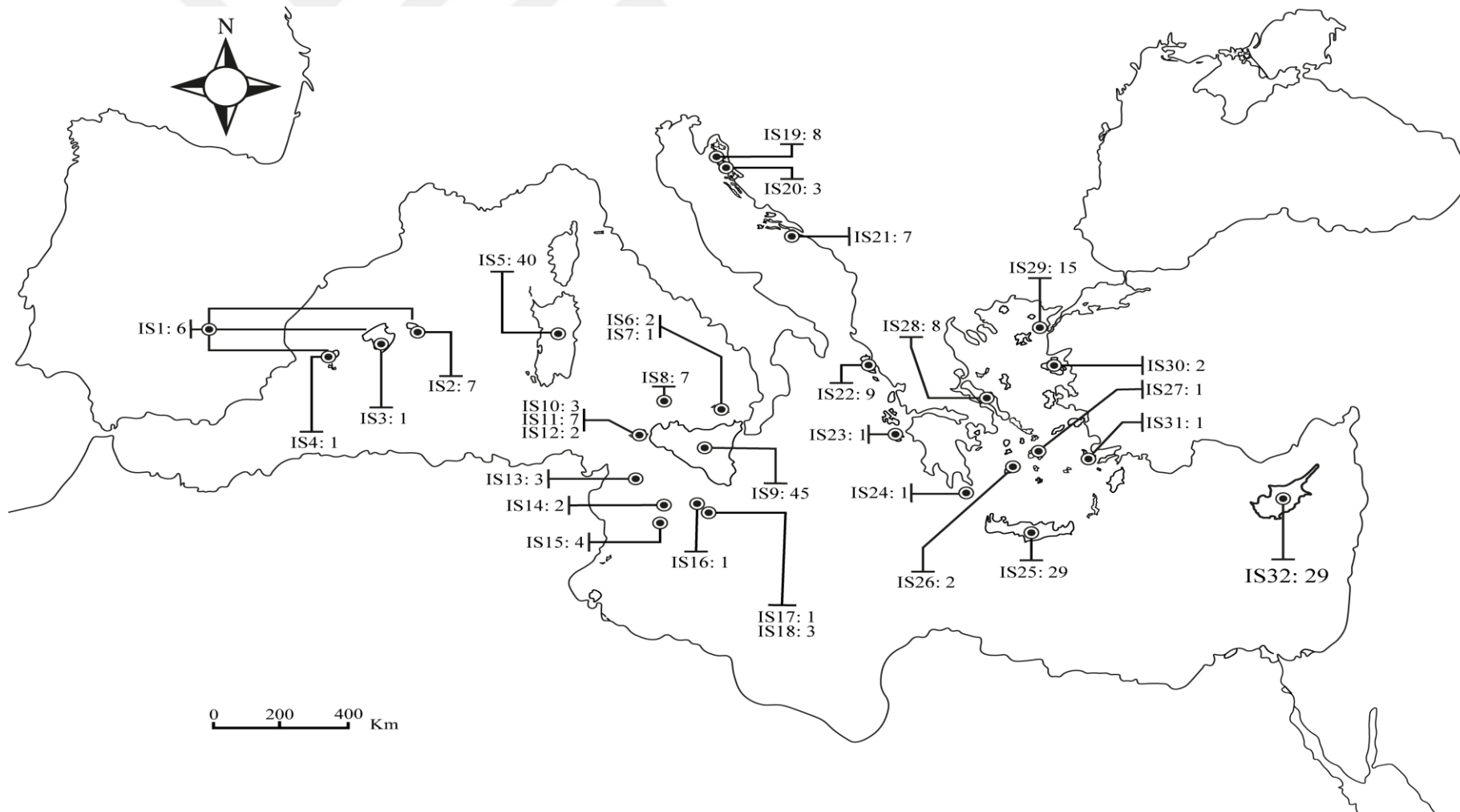


Figure 5.3. Representation of the ostracod species found in 32 Mediterranean islands on the map (Ostracods diagnosed using carapace, valves, sp. and cf. are not included). The Balearic Islands (Majorca, Minorca, Ibiza and Formentera) are shown as a single island on the map. Abbreviations: IS: island code. IS1: Balearic Island, IS2: Minorca Island, IS3: Mallorca Island, IS4: Ibiza Island, IS5: Sardinia Island, IS6: Vulcano Island, IS7: Lipari Island, IS8: Ustica Island, IS9: Sicily Island, IS10: Levanzo Island, IS11: Favignana Island, IS12: Marettimo Island, IS13: Pantelleria Island, IS14: Linosa Island, IS15: Lampedusa Island, IS16: Gozo Island (Maltese), IS17: Manoel Island (Maltese), IS18: Maltese Island, IS19: Cres Island, IS20: Pag Island, IS21: Mljet Island, IS22: Corfu Island, IS23: Zakynthos Island, IS24: Kythira Island, IS25: Crete Island, IS26: Milos Island, IS27: Naxos Island, IS28: Euboa Island, IS29: Gökçeada Island, IS30: Lesbos Island, IS31: Kos Island, IS32: Cyprus Island.

Table 5.1. Common 34 non-marine Ostracoda species from 32 Mediterranean and 156 non-Mediterranean islands.

<i>Bradleycypris obliqua</i>	<i>Heterocypris salina</i>
<i>Candona candida</i>	<i>Ilyocypris bradyi</i>
<i>Candonocypris novaezelandiae</i>	<i>Ilyocypris gibba</i>
<i>Candonopsis kingsleii</i>	<i>Leucocythere mirabilis</i>
<i>Cyclocypris laevis</i>	<i>Limnocythere inopinata</i>
<i>Cyclocypris ovum</i>	<i>Limnocytherina sanctipatricii</i>
<i>Cypretta turgida</i>	<i>Notodromas persica</i>
<i>Cypria ophthalmica</i>	<i>Plesiocypridopsis newtoni</i>
<i>Cyprideis torosa</i>	<i>Potamocypris arcuata</i>
<i>Cypridopsis vidua</i>	<i>Potamocypris villosa</i>
<i>Cypris bispinosa</i>	<i>Pseudocandona albicans</i>
<i>Cypris decaryi</i>	<i>Sarscypridopsis aculeata</i>
<i>Cypris pubera</i>	<i>Sarscypridopsis lanzarotensis</i>
<i>Darwinula stevensoni</i>	<i>Stenocypris major</i>
<i>Eucypris virens</i>	<i>Strandesia reticulata</i>
<i>Herpetocypris helenae</i>	<i>Trajancypris clavata</i>
<i>Heterocypris incongruens</i>	<i>Vestalenula cylindrica</i>

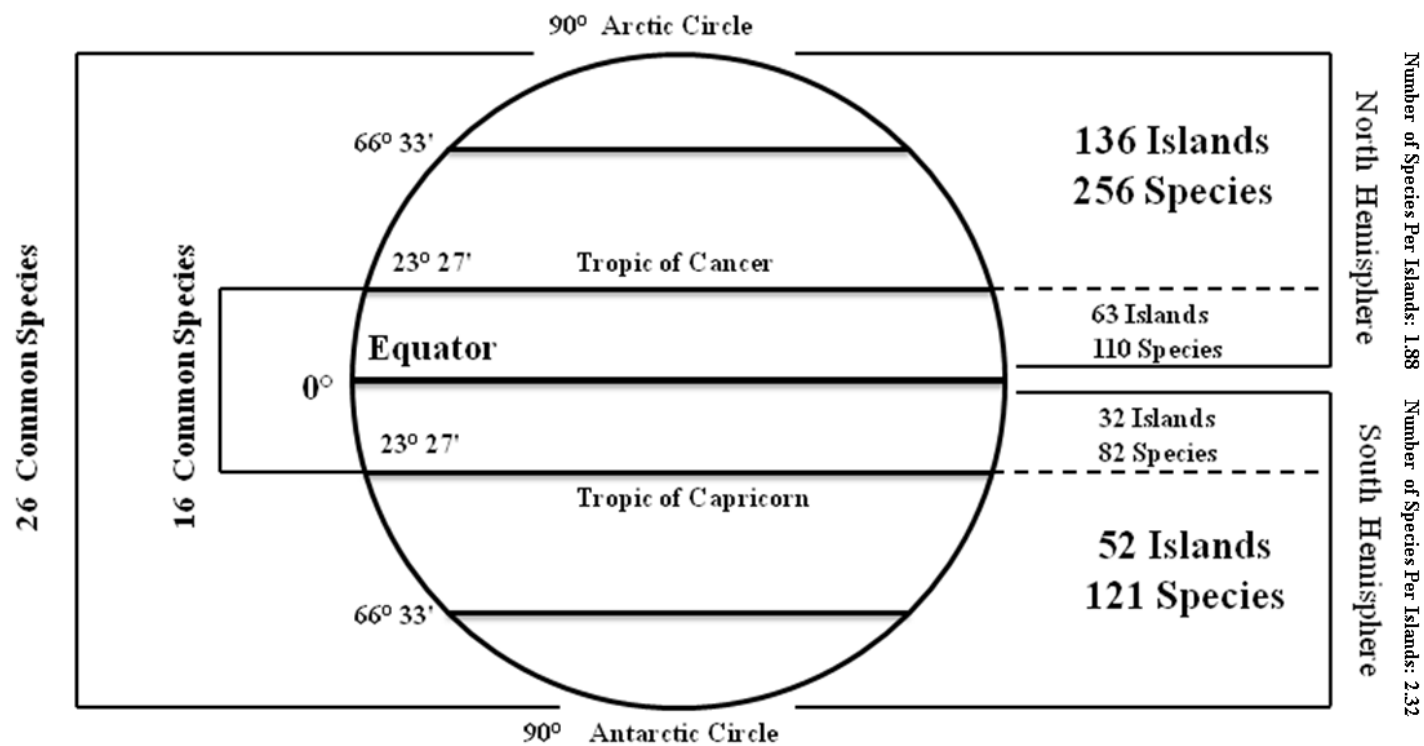


Figure 5.4. Distribution of non-marine Ostracoda on islands in the northern and southern hemispheres.

Table 5.2. Common 26 non-marine Ostracoda species from 136 islands north of the equator and 52 islands south of the equator.

<i>Bradleytriebella trispinosa</i>	<i>Fabaeformiscandona groenlandica</i>
<i>Candonocypris novaezelandiae</i>	<i>Fabaeformiscandona subacuta</i>
<i>Chlamydotheca unispinosa</i>	<i>Heterocypris incongruens</i>
<i>Cypretta seurati</i>	<i>Limnocythere notodonta</i>
<i>Cypretta turgida</i>	<i>Mangalocypris africana</i>
<i>Cyprideis torosa</i>	<i>Paracypris uberis</i>
<i>Cypridopsis vidua</i>	<i>Physocypris capensis</i>
<i>Cyprinotus cingalensis</i>	<i>Plesiocypridopsis newtoni</i>
<i>Cypris decaryi</i>	<i>Pseudocandona antilliana</i>
<i>Cypris granulata</i>	<i>Stenocypris derupta</i>
<i>Darwinula stevensoni</i>	<i>Stenocypris major</i>
<i>Dolerocypris taalensis</i>	<i>Stenocypris malayica</i>
<i>Eucypris virens</i>	<i>Strandesia vinciguerrae</i>

Table 5.3. Common 16 non-marine Ostracoda species from 63 islands between the equator and the tropic of Cancer and 32 islands between the equator and the tropic of Capricorn.

<i>Stenocypris malayica</i>	<i>Cypridopsis vidua</i>
<i>Stenocypris major</i>	<i>Cyprinotus cingalensis</i>
<i>Stenocypris derupta</i>	<i>Cypris decaryi</i>
<i>Pseudocandona antilliana</i>	<i>Cypris granulata</i>
<i>Dolerocypris taalensis</i>	<i>Darwinula stevensoni</i>
<i>Chlamydotheca unispinosa</i>	<i>Limnocythere notodonta</i>
<i>Cypretta turgida</i>	<i>Mangalocypris africana</i>
<i>Cyprideis torosa</i>	<i>Physocypris capensis</i>

5.3 The Theory of Island Biogeography

According to the theory of island biogeography (MacArthur and Wilson, 1963; 1967), as the islands get closer to the source of colonization (or the mainland), the migration rate they receive increases and according to Gotelli (1995), colonization success is inversely proportional to the distance and isolation of the resource pool. Indeed, the t-test result (Table 4.1.), it was determined that there was

no significant difference between Mersin (Türkiye) and Cyprus (the present study) ostracod species and supports correlations between the two sites. It is also possible that different passive dispersal methods may have been applied to transport of ostracods to Cyprus. It is known that human influence (Meisch, 2000) causes to the distribution of ostracods, such as the transport of ostracod eggs in sediments sticking to footwear (Valls et al., 2015). Human-induced methods applied in the past and present may have played a role in the passive distribution of ostracods to the island (e.g., water transport methods from Türkiye to Cyprus). According to Altınsaçlı and Griffiths (2002); Dalgakıran et al. (2020); Yavuzatmaca (2022), 37 ostracod species belonging to 19 genera were identified from the Mersin province, Türkiye (Appendix H). There are 17 species common between these two areas (Figure 5.1.). As a result of water transportation methods applied in the past and today, 17 common ostracod species and as a result of this study, two species (e.g. *I. monstifica* and *H. intermedia* that were not previously described from 188 islands and were described for the first time from the Northern Cyprus were also described in Mersin), suggesting that water transportation methods may be effective in the passive distribution of ostracods from mainland of Mersin (Türkiye) to the island of Cyprus. It should be noted that water transport is not the only method for distribution of ostracods to the island. It is known that birds and winds are important vectors in the distribution of small aquatic creatures, it has been reported in previous studies that these creatures disperse by adhering to bird feces, beaks or feathers (Proctor, 1964; Ramos et al., 2022). As the Brochet et al. (2010) stated that ostracods are dispersed via by waterfowl. Identification of ostracods in the faecal of waterfowl *Anas platyrhynchos* and *Anas strepera* (Proctor, 1964), in the faecal and soil of their nests of *Anas clypeata*, *Anas crecca* and *Fulica atra* (Frisch et al., 2007), and in the rectum of *A. crecca* (Broched et al., 2010) reveals the impact of birds on ostracods distribution. Charalambidou et al. (2008), Kassinis et al. (2010), Gücel et al. (2012) and Kassinis et al. (2012) revealed that Cyprus is an important migration point for waterfowl in summer and winter. Hence, all of the waterfowl (e.g., *A. platyrhynchos*, *A. strepera*, *A. clypeata*, *A. crecca* and *F. atra*) being recorded with their studies in the Cyprus. From this frame it can be assumed that some ostracod species on the island might be able to come to the island via passive way of waterfowl in the past. Although it is known that the distance between Mersin and Cyprus is approximately 68.95 km, considering the species similarity between

the two regions found as a result of the t-test and the ostracod distribution methods, we can theoretically accept that the approaches of Gotelli (1995) and MacArthur and Wilson, (1963; 1967) can be correct when we assume Mersin province as the source of colonization for the island of Cyprus. Based on these results it can be concluded that “Hypothesis 4: Island distance from the mainland have no effect on the distribution of species on the islands” was rejected because the findings including Mersin and the Cyprus give us results opposite to the hypothesis. The close distance and species similarities of these two regions appear to be factors that helped us reach this conclusion.

Another assumption of the island biogeography theory is that the area of the island and the rate of migration it receives are directly proportional, that is, as the island area increases, the effects of the increase in the rate of migration. In the study conducted by Kohn and Walsh (1994) on plant species, it was revealed that when the islands area increases, the number of species numbers increases. In another study conducted by Millien-Parra and Jaeger (1999) on terrestrial mammals, it was determined that species numbers increased as the islands area increased. In a different study, it was determined by Murakami and Hirao (2010) that the richness of insects species in the islands were directly proportional to the increase in the island area. When the relationship between island area and ostracod species is examined, a total of 188 islands and 351 species were focused (Appendix J, I), it was determined that this assumption is not currently supported in some islands for ostracods. For example as seen Table 5.4. the island of Bonaire has more species than the larger island of Puerto Rico, Gökçeada has more species than the larger island of Lesbos, or the island of Java has fewer species than the smaller island of New Caledonia. It is also found on some islands supporting this theory. For example as seen Table 5.4. the island of Cyprus is a smaller island than the island of Sicily and the number of species it has is determined to be less than the Sicily. These differences appear to be an indication that we do not currently have sufficient knowledge to decide whether this theory is applicable or not applicable to Ostracoda. it is not possible to conclude whether " Hypothesis 5: islands area have no effect on the distribution of species on the islands" is acceptable or unacceptable. The lack of information and studies in the field make it inappropriate to reach a conclusion about the hypothesis.

Table 5.4. Areas of islands including ostracod species and the number of species they have.

Island	Island Area (km ²)	Number of Species
Bonaire	288	13
Puerto Rico	13.791	9
Gökçeada	289	15
Lesbos	1.633	2
New Caledonia	18.576	10
Java	128.297	9
Cyprus	9.251	29
Sicily	25.711	45

6. CONCLUSIONS AND RECOMMENDATIONS

In conclusion, at the end of this study, extensive information was obtained about the ecological, chemical and environmental properties of the Northern Cyprus water bodies. Twenty eight species were determined from the Northern Cyprus during the present study and 24 species including two possibly new species (e.g., *Eucypris* n. sp.1 and *Eucypris* n. sp.2) were new record for the island Cyprus. This study suggested that the distribution of the species identified on the island was affected by ecological, environmental, and chemical variables in the light of CCA, C2, correlation analysis. Thus, it was proposed that ostracod species may have different optimum and tolerance values in the results obtained from different water bodies. As a result of the CCA analysis, it is seen that the species identified from the Northern Cyprus was relatively different from the other islands and three variables (EC, Ca^{+2} and Mg^{+2}) were the most effective variables on the species distribution. As a result of the ternary plot analysis, it was determined that the island waters were predominantly characterized with Na^+ and Cl^- . Comparative result of the t-test indicated no significant difference between the numbers of species of Cyprus and Mersin. This result shows that there is species similarity between the two regions. Also, results outlines that the methods used to transport water from Mersin to Cyprus in the past until today appears to cause possible effects on the species distribution. In addition to this, the fact that the island is on an important bird migration route that may be another effective factor in the emergence of such a result.

Considering the non-marine ostracods in and out of the Mediterranean Sea, there are 351 species found from 188 islands. As a result of the literature study and this study, the island of Cyprus and island of Crete were determined to be the third islands with the highest diversity of living species among the 188 islands. *I. monstifica*, *P. sucki*, *H. intermedia*, *P. unicaudata* and *P. relicta* were identified for the first time in the Northern Cyprus and were determined as the first island record among 188 islands and these species make an important contribution to distinguishing the Cyprus from other islands. *I. decipiens*, *I. inermis*, *H. reptans*, *H. brevicaudata*, *H. chevreuxi*, *P. olivaceus*, *H. barbara*, *C. elongata*, *P. smaragdina*

and *T. amnicola* were identified in the Northern Cyprus and after all literature research, it was determined that these species were described only between the Mediterranean islands and not on the islands outside Mediterranean among the islands examined in this study. These species play an important role in distinguishing the Cyprus from the islands outside the Mediterranean. Based on the data obtained from a total of 188 islands, it was determined that there was a difference in the number of species between the islands in the north and south of the aquator and that the number of species per island was higher in the islands in the south. While it was determined that the island biogeography theory's approach that the migration to the island increase as it gets closer to the mainland could be a suitable approach for ostracods when Mersin and Cyprus were considered, on the other hand, the approach that the number of species increase as the island area increases does not currently provide us with sufficient information to make a decision about whether this approach will be appropriate or not for ostracods, due to the insufficient information available and the lack of studies conducted in this field. More future studies in this direction will be effective in clarifying this issue.

In future studies, it is important to determine the migration route of waterfowl and to identify the water sources frequented by waterfowl on this route, and thus it will be important to get an idea about where the ostracods were transported to the island or where they disperses from the island. Although sampling was done from the sites in the north of the island in this study, sampling could not be done in the southern part of the island. Conducting the study in the southern part of island in the future will be useful in determining the distribution of Ostracoda species throughout the island.

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8. APPENDICES

Appendix A Ecological and environmental variables obtained from different water bodies in the Northern Cyprus and species recorded in these areas. Abbreviations: St No: site number, pH: hydrogen ion concentration, EC: electrical conductivity (mS cm^{-1}), Tw: water temperature ($^{\circ}\text{C}$), ATM: atmospheric pressure (mmHg), ORP: oxidation reduction potential (mv), Elev: elevation (m a.s.l), SAL: salinity (ppt), TDS: total dissolved solids (ppt), Dep: depth (cm), Ct: *Cyprideis torosa*, Ce: *Cypridopsis elongata*, Cv: *Cypridopsis vidua*, Ed: *Eucypris n. sp.1*, El: *Eucypris n.sp.2*, Hb: *Herpetocypris brevicaudata*, Hc: *Herpetocypris chevreuxi*, Hi: *Herpetocypris intermedia*, Hr: *Herpetocypris reptans*, Ha: *Heterocypris barbara*, Hn: *Heterocypris incongruens*, Hs: *Heterocypris salina*, Ib: *Ilyocypris bradyi*, Id: *Ilyocypris decipiens*, In: *Ilyocypris inermis*, Im: *Ilyocypris monstifica*, Ig: *Ilyocypris gibba*, Li: *Limnocythere inopinata*, Pr: *Paralimnocythere relict*, Ps: *Potamocypris smaragdina*, Pn: *Potamocypris unicaudata*, Pa: *Pseudocandona albicans*, Pu: *Pseudocandona sucki*, Po: *Psychrodromus olivaceus*, Sa: *Sarscypridopsis aculeata*, Si: *Stenocypris major*, Tc: *Trajancypris clavata*, Ta: *Tyrrhenocythere amnicola*.

Appendix A (Continued)

St No	pH	EC	Tw	ATM	ORP	Elev.	SAL	TDS	Dep.	Coordinate	Date	Res.	Species
1	5.14	24.73	30.40	14.547	18.1	129	14.98	12.4	10	35°15'007"N, 033°34'750"E	18.05.2022	-	
2	10.36	0.617	27.61	14.605	26.2	79	0.29	0.303	20	35°15'723"N, 033°39'652"E	18.05.2022	0.0017	
3	8.65	5.273	25.05	14.527	70.6	125	2.84	2.638	40	35°17'382"N, 033°39'348"E	18.05.2022	0.302	Cv
4	8.78	2.381	25.2	14.549	73.5	104	1.22	1.193	40-50	35°17'332"N, 033°43'285"E	18.05.2022	0.0004	Im, Ig, Li
5	7.9	3.244	19.33	14.625	54.4	45	1.7	1.622	40-55	35°11'520"N, 033°38'551"E	19.05.2022	0.0003	Ct, Hn, Hs, Id, Sa, Tc
6	8.48	8.634	21.17	14.689	105.6	12	4.82	4.31	5	35°07'202"N, 033°45'501"E	19.05.2022	0.0001	Ha, Im, Sa
7	7.95	11.93	21.51	14.730	96.7	-3	6.84	5.969	15-17	35°07'833"N, 033°53'899"E	19.05.2022	0.0001	Hn, Ig, Sa
8	9.07	8.694	24.99	14.737	-53.9	-5	4.83	4.336	40	35°08'417"N, 033°55'073"E	19.05.2022	0.0001	Hn, Hs, Sa
9	9.35	37.17	25.24	14.734	63.5	-6	23.82	18.79	20	35°09'37.4"N 33°54'43.7"E	19.05.2022	0	Ct, El n.sp., Sa
10	9.14	39.99	28.27	14.739	20.3	-6	25.45	20.01	10	35°09'36.1"N 33°54'46.9"E	19.05.2022	0	Ct, El n.sp.

Appendix A (Continued)

St No	pH	EC	Tw	ATM	ORP	Elev.	SAL	TDS	Dep.	Coordinate	Date	Res.	Species
11	8.36	20.32	26.01	14.743	4.2	-5	12.12	10.17	20	35°09'470"N, 033°54'192"E	19.05.2022	0	Ct
12	8.59	0.4	21.37	14.338	13.5	273	0.19	0.201	5	32°21'654"N, 033°52'778"E	19.05.2022	0.0025	Cv, Hn
13	7.68	33.86	28.52	14.742	74.4	-5	21.13	16.92	25	35°19'680"N, 033°58'257"E	19.05.2022	0	Hr
14	9.51	0.638	23.48	14.499	59.2	174	0.30	0.313	20	35°30'331"N, 0,34°12'063"E	19.05.2022	0.0016	Ct, Hn, Ig
15	7.9	1.634	20.88	14.520	89.3	166	0.83	0.0082	-	35°30'786"N, 034°11'937"E	19.05.2022	0.0006	Ig
16	-	-	-	-	-	108	-	-	1-2	35°30'423"N, 034°13'023"E	19.05.2022	-	Hs
17	7.58	1.097	20.78	14.461	119.6	184	0.55	0.55	5	35°32'134"N, 034°14'571"E	19.05.2022	0.0009	Hs
18	8.45	53.64	27.99	14.731	87.3	2	35.33	26.83	25	35°34'022"N, 034°14'894"E	19.05.2022	0	Ct, Cv, Hn, Sa, Ta
19	-	-	-	-	-	2	-	-	5	35°34'022"N, 034°14'849"E	19.05.2022	-	Cv, Hc, Hs, Im, In
20	7.24	1.993	24.05	14.710	60	5	1	0.987	5	35°39'569"N, 034°34'477"E	19.05.2022	0.0005	Hs

Appendix A (Continued)

St No	pH	EC	Tw	ATM	ORP	Elev.	SAL	TDS	Dep.	Coordinate	Date	Res.	Species
21	8.12	2.967	19.82	14.539	113.1	-	1.55	1.483	110	35°28'128"N, 034°08'609"E	19.05.2022	0.0003	Hc, In
22	7.57	0.507	17.34	14.242	45.6	322	0.25	0.254	5	35°21'082"N, 033°47'819"E	20.05.2022	0.002	Hn
23	8.84	2.228	20.02	14.615	78.1	62	1.14	1.115	50	35°22'273"N, 033°56'654"E	20.05.2022	0.0004	Cv
24	8.37	2.667	22.5	14.744	97.5	-18	1.38	1.334	-	35°18'279"N, 033°56'517"E	20.05.2022	0.0004	Hn
25	7.18	6.138	19.22	14.508	60.1	-	3.36	3.074	-	35°19'394"N, 033°46'152"E	20.05.2022	0.0002	
26	6.95	3.087	21.2	14.536	19	-	1.62	0.0154	20	35°19'543"N, 033°46'443"E	20.05.2022	0.0003	Ct, In, Pa
27	-	-	-	-	-	-	-	-	0	36°23'002"N, 033°51'563"E	20.05.2022	-	
28	8.85	0.443	26.01	14.693	67.3	28	0.21	0.223	30	35°23'871"N, 033°46'177"E	20.05.2022	0.0023	Ig, Tc
29	8.23	2.385	25.72	14.684	83.5	31	1.22	1.192	120	35°23'669"N, 033°44'920"E	20.05.2022	0.0004	
30	8.27	2.286	25.8	14.713	104.2	22	1.17	1.144	150	35°23'742"N, 033°44'852"E	20.05.2022	0.0004	

Appendix A (Continued)

St No	pH	EC	Tw	ATM	ORP	Elev.	SAL	TDS	Dep.	Coordinate	Date	Res.	Species
31	7.36	2.392	20.44	14.605	123.5	79	1.24	1.197	10	35°23'008"N, 033°45'193"E	20.05.2022	0.0004	Hs, In
32	7.76	2.459	19.5	14.601	110	81	1.27	1.228	20	35°23'007"N, 033°45'194"E	20.05.2022	0.0004	
33	8.07	1.663	27.8	14.731	108	-13	0.83	0.831	110	35°21'695"N, 033°39'863"E	20.05.2022	0.306	Cv
34	8.36	1.218	29.16	14.766	110.8	-12	0.6	0.609	30	35°21'714"N, 033°39'884"E	20.05.2022	0.0008	Hc, Hs
35	7.51	0.85	19.51	14.371	99.2	247	0.42	0.425	5	35°19'011"N, 033°33'392"E	20.05.2022	0.0012	
36	8.27	0.767	23.23	14.390	119.8	258	0.37	0.383	140	35°19'021"N, 033°33'396"E	20.05.2022	0.0013	Hs
37	8.59	0.01	27.78	14.624	118	59	0.49	0.5	40	35°18'887"N, 033°29'854"E	20.05.2022	0.001 m	Ce, Ig, Pa
38	8.7	1.431	27.31	14.618	96.2	63	0.71	0.717	40	35°18'946"N, 033°26'612"E	20.05.2022	0.0007	Cv, Id, Ig
39	8.5	3.955	26.46	14.681	95.9	18	2.09	1.981	50	35°19'540"N, 033°25'919"E	20.05.2022	0.0003	Ct, Cv, Ig
40	7.9	7.977	26.37	14.571	89.8	143	4.4	3.987	10	35°14'929"N, 033°27'516"E	20.05.2022	0.0001	Cv, Ig

Appendix A (Continued)

St No	pH	EC	Tw	ATM	ORP	Elev.	SAL	TDS	Dep.	Coordinate	Date	Res.	Species
41	8.52	5.082	27.12	14.501	97.1	144	2.72	2.533	-	35°14'148"N, 033°21'827"E	20.05.2022	0.0002	Ig, Li, Sa
42	8.41	6.297	25.46	14.495	85.2	147	3.43	3.155	30	35°13'998"N, 033°18'067"E	20.05.2022	0.0002	Cv, Hn, Hs, Ig, Pn, Sa, Tc
43	8.54	1.912	24.28	14.574	-	81	0.97	0.958	10	35°11'543"N, 033°25'661"E	21.05.2022	0.305	Cv, Hs, Ps, Si
44	7.22	8.897	17.87	14.574	111.04	77	5	4.445	10	35°11'681"N, 033°25'670"E	21.05.2022	0.0001	Hn, Hs, Im
45	7.54	6.82	19.62	14.556	76.3	93	3.76	3.412	15	35°12'311"N, 33°22'727"E	21.05.2022	0.0001	Hs
46	8.26	5.834	23.14	14.487	-	153	3.17	2.918	40	35°14'280"N, 033°15'611"E	21.05.2022	0.0002	Cv, Hs, Ig, Li, Sa
47	7.98	26.30	18.16	14.526	99.8	136	16.16	13.16	10	35°12'93.2"N, 033°10'76.7"E	21.05.2022	0	Ed n.sp., Ig
48	8	27.78	18.48	14.545	101	160	17.15	13.89	13	35°16'24.1"N 33°10'09.9"E	21.05.2022	0	El n.sp., Hn, Hs, Ig, Sa
49	8.06	32.99	20.83	14.532	99.8	142	20.63	16.46	10	35°12'40"N, 033°10'12"E	21.05.2022	0	El n.sp., Hn, Hs, Sa
50	9.24	7.002	22.54	14.466	100.8	184	3.83	3.469	-	35°15'738"N, 033°10'171"E	21.05.2022	0.0001	Hn, Hs, Ib, Ig, Li, Sa

Appendix A (Continued)

St No	pH	EC	Tw	ATM	ORP	Elev.	SAL	TDS	Dep.	Coordinate	Date	Res.	Species
51	7.58	3.098	16.86	14.416	84.4	226	1.63	1.549	10	35°16'399"N, 033°10'171"E	21.05.2022	0.0003	Hn, Tc
52	7.43	4.524	17.21	14.417	92	226	2.43	2.262	10	35°16'402"N, 033°10'165"E	21.05.2022	0.0002	El n.sp, Hn, Hs, Id, Ig
53	8.34	0.921	23.95	14.442	101	216	0.44	0.452	3	35°17'330"N, 033°07'807"E	21.05.2022	0.0011	Hn
54	7.98	3.433	23.23	14.475	108	192	1.8	0.0172	25	35°17'138"N, 033°05'471"E	21.05.2022	0.0003	Hs, Ig, Pr
55	8.28	0.482	22.94	14.605	104.8	92	0.23	0.241	40	35°19'818"N, 033°04'403"E	21.05.2022	0.0021	Cv
56	8.03	0.971	23.71	14.709	107.7	38	0.48	0.486	8	35°19'986"N, 033°04'221"E	21.05.2022	0.0010	Hb, Hs, In
57	7.17	2.173	23.88	14.551	13.4	134	1.11	1.087	-	35°16'256"N, 033°02'653"E	21.05.2022	0.305	Hs, Ib
58	8.92	13.74	25.44	14.667	99.6	47	7.93	6.873	100	35°15'283"N, 033°59'030"E	21.05.2022	0.0001	Ct, Cv, Hs, Sa
59	8.12	62.62	28.54	14.714	110.3	16	42.94	32.2	50	35°12'618"N, 033°55'285"E	21.05.2022	0	Cv, Sa
60	8.26	70.32	28.74	14.727	52.5	11	48.12	35.2	100	35°12'630"N, 033°55'305"E	21.05.2022	0	

Appendix A (Continued)

St No	pH	EC	Tw	ATM	ORP	Elev.	SAL	TDS	Dep.	Coordinate	Date	Res.	Species
61	8.83	0.885	28.54	14.580	116.3	103	0.42	0.432	30	35°06'555"N, 032°50'084"E	21.05.2022	0.0012	
62	8.1	0.599	26.52	14.486	6.8	176	0.29	0.299	8	35°06'426"N, 032°50'687"E	21.05.2022	0.0017	Cv, Ig, Pu
63	7.88	1.063	19.52	14.511	-	149	0.53	0.532	5	35°10'844"N, 033°30'133"E	22.05.2022	0.0009	
64	7.75	2.773	22.54	14.507	-	148	1.44	1.386	15	35°10'848"N, 033°30'133"E	22.05.2022	0.0004	
65	9.3	4.046	34.91	14.318	-	155	2.10	2.023	15	35°08'398"N, 033°31'087"E	13.07.2022	0.0002	Cv, Hi, Pu
66	9.51	19.17	30;74	14.237	-	216	11.30	9.581	40	33°14'285"N, 033°25'788"E	13.07.2022	0.0001	Hs, Sa
67	10.77	10.44	31.02	14.245	-	216	5.84	5.219	10	33°14'316"N, 033°26'035"E	13.07.2022	0.0001	Cv, Hs
68	7.75	6.333	23.66	14.492	-	54	3.45	3.166	5	35°09'114"N, 032°51'531"E	14.07.2022	0.0002	Hs
69	-	-	-	-	-	212	-	-	50	36°06'024"N, 032°50'769"E	14.07.2022	-	Hc
70	9.46	0.778	30.41	13.858	-	216	0.38	0.39	15	35°16'718"N, 033°23'067"E	17.07.2022	0.0013	Ig

Appendix A (Continued)

St No	pH	EC	Tw	ATM	ORP	Elev.	SAL	TDS	Dep.	Coordinate	Date	Res.	Species
71	8.49	0.766	17.64	14.016	-	282	0.38	0.383	10	35°19'104"N, 033°13'138"E	26.07.2022	0.0013	Po
72	8.32	0.692	21.39	14.018	-	378	0.34	0.346	130	35°19'120 N, 033°13'157"E	26.07.2022	0.0014	Cv, Hc, Hs
73	8.18	1.264	25.11	14.51	-	79	0.63	0.632	300	35°21'555"N, 033°08'116"E	26.07.2022	0.0008	Cv
74	8.04	1.061	23.48	14.453	-	106	0.52	0.529	50	35°20'848"N, 033°09'031"E	26.07.2022	0.0009	Cv
75	8.37	1.037	26.69	14.367	-	155	0.51	0.518	150	35°20'288"N, 033°10'540"E	26.07.2022	0.0010	Cv, Po
76	8.97	0.674	24.66	14.364	-	162	0.33	0.337	5	35°20'297"N, 033°10'427"E	26.07.2022	0.0015	
77	9.82	0.55	35.52	14.376	-	118	0.26	0.275	8	35°20'312"N, 033°10'404"E	26.07.2022	0.0018	
78	8.84	0.826	21.47	14.351	-	117	0.41	0.413	40	35°20'223"N, 033°10'374"E	26.07.2022	0.0012	In
79	9.16	1.070	33.04	14.349	-	139	0.52	0.533	5	35°13'261"N, 033°28'382"E	12.08.2022	0.0009	Hn

Appendix B Water anion and cation values of different water bodies in the Northern Cyprus and diagnosed species. Abbreviations: St No: site number, Na: Sodium (me/lt), Ca^{+2} : Calcium (me/lt), Mg^{+2} : Magnesium (me/lt), HCO_3^- : Bicarbonate (me/lt), Cl^- : Chlorine (me/lt), SO_4^{-2} : Sulphate (me/lt) and iz: Trace Amounts, Ct: *Cyprideis torosa*, Ce: *Cypridopsis elongata*, Cv: *Cypridopsis vidua*, Ed: *Eucypris n. sp.1*, El: *Eucypris n.sp.2*, Hb: *Herpetocypris brevicaudata*, Hc: *Herpetocypris chevreuxi*, Hi: *Herpetocypris intermedia*, Hr: *Herpetocypris reptans*, Ha: *Heterocypris barbara*, Hn: *Heterocypris incongruens*, Hs: *Heterocypris salina*, Ib: *Ilyocypris bradyi*, Id: *Ilyocypris decipiens*, In: *Ilyocypris inermis*, Im: *Ilyocypris monstifica*, Ig: *Ilyocypris gibba*, Li: *Limnocythere inopinata*, Pr: *Paralimnocythere relict*, Ps: *Potamocypris smaragdina*, Pn: *Potamocypris unicaudata*, Pa: *Pseudocandona albicans*, Pu: *Pseudocandona sucki*, Po: *Psychrodromus olivaceus*, Sa: *Sarscypridopsis aculeata*, Si: *Stenocypris major*, Tc: *Trajancypris clavata*, Ta: *Tyrrhenocythere amnicola*.

Appendix B (Continued)

St No	Na ⁺	Ca ⁺²	Mg ⁺²	HCO ₃ ⁻	Cl ⁻	SO ₄ ⁻²	Species
1	222.2	38.1	124.2	5.18	159.5	219.82	
2	5.4	3	1.22	5.38	5.8	iz	
3	30.8	6.94	15.3	7.6	21.4	45040	Cv
4	14.3	3.56	4.94	5	12.5	44990	Im, Ig, Li
5	13.2	6.4	8.1	8	19.9	iz	Ct, Hn, Hs, Id, Sa, Tc
6	23.65	74.3	95.7	4.5	61	128.15	Ha, Im, Sa
7	121.2	20	75	6.7	192.5	17	Hn, Ig, Sa
8	55.55	9.2	19.12	9.36	74	0.51	Hn, Hs, Sa
9	303	18	111.8	5.18	500	iz	Ct, El n.sp., Sa
10	313.1	16	115	5.4	448	iz	Ct, El n.sp.
11	166.65	14.6	63.6	7.32	210	27.53	Ct
12	3.3	3.48	0.52	3.14	3.2	0.96	Cv, Hn
13	323.2	47.5	152.5	4.84	151.5	375.86	Hr
14	1.65	1	2.32	1.96	17	iz	Ct, Hn, Ig
15	2.76	5.2	0.8	5.16	10.8	iz	Ig
16	16.5	0.8	9.2	8.8	7.4	10.3	Hs
17	4.4	0.92	7.84	5.2	5.7	2.26	Hs
18	333.3	23.6	112.4	9.08	575	iz	Ct, Cv, Hn, Sa, Ta
19	20.9	4.62	6.72	11.02	26.7	iz	Cv, Hc, Hs, Im, In
20	4.4	4.44	14.72	5.6	13.4	4.56	Hs
21	10.45	12	6.5	3.2	17.6	8.15	Hc, In
22	18.15	2.4	3.68	5.94	3.7	14.59	Hn
23	31.9	0.6	6.32	8.4	13.1	17.32	Cv
24	28.05	2.74	5.38	3.92	18	14.25	Hn
25	30.8	26	16.78	5.28	22.6	45.7	
26	3.3	28	0.28	3.92	5.9	21.76	Ct, In, Pa
27	-	-	-	-	-	-	
28	6.05	0.74	3.26	6.4	2.6	1.05	Ig, Tc
29	5.5	1.2	13.44	8.88	9.6	1.66	
30	7.15	0.86	13.08	7.2	9.1	4.79	

Appendix B (Continued)

St No	Na ⁺	Ca ⁺²	Mg ⁺²	HCO ₃ ⁻	Cl ⁻	SO ₄ ⁻²	Species
31	5.5	2.36	13.32	11.6	9.4	0.18	Hs, In
32	6.05	2	10.94	5.8	8.2	4.99	
33	9.35	0.8	5.2	5.12	7.2	3.03	Cv
34	5.5	1.2	3.4	5.64	5.4	iz	Hc, Hs
35	1.65	1.2	3.4	3.54	2.3	0.41	
36	0.3	1.2	3.4	4.4	2.3	iz	Hs
37	4.95	1.6	0.8	4.84	2.4	0.13	Ce, Ig, Pa
38	21.45	2	6.14	3.8	9.2	19.59	Cv, Id, Ig
39	33	2	14	5.2	16.8	27	Ct, Cv, Ig
40	49	12.14	24.26	3.5	22.7	59.3	Cv, Ig
41	42.7	8.18	17.84	2.86	19.2	46.64	Ig, Li, Sa
42	49.6	2.2	21.8	5.8	21	46.8	Cv, Hn, Hs, Ig, Pn, Sa, Tc
43	16.5	2.8	4.2	6.4	8.4	8.7	Cv, Hs, Ps, Si
44	55.2	11.24	13.56	5.2	48	26.8	Hn, Hs, Im
45	60.9	4	18.16	4	38	41.96	Hs
46	17.85	3.3	15.3	4.6	23.5	8.35	Cv, Hs, Ig, Li, Sa
47	308.0 5	17	109.1	8.62	281	144.5 3	Ed n.sp., Ig
48	262.6	21	111.6	6.54	210	178.6 6	El n.sp., Hn, Hs, Ig, Sa
49	313.1	23	158.3	8.56	271. 5	214.3 4	El n.sp., Hn, Hs, Sa
50	18.9	14	44.2	3.58	99.2	iz	Hn, Hs, Ib, Ig, Li, Sa
51	5.25	2	19.84	12.96	25.4	iz	Hn, Tc
52	42	0.74	18.82	9.48	24.4	27.68	El n.sp, Hn, Hs, Id, Ig
53	3	0.8	5.1	5.02	3.8	0.1	Hn
54	17.6	6.2	10.6	4.82	18.9	10.68	Hs, Ig, Pr
55	0.6	3.4	2.12	3.04	1.6	1.48	Cv
56	2.75	4	4.62	3.14	3.3	4.93	Hb, Hs, In
57	10.45	2.36	6.8	5.74	14.6	iz	Hs, Ib
58	106.0 5	9	57.7	3.4	79	90.8	Ct, Cv, Hs, Sa
59	383.8	22	160.8	4.98	646	iz	Cv, Sa
60	404	16	164,5	4,56	717, 5	iz	

Appendix B (Continued)

St No	Na ⁺	Ca ⁺²	Mg ⁺²	HCO ₃ ⁻	Cl ⁻	SO ₄ ⁻²	Species
61	15	2.1	3.62	3.6	9.8	7.32	
62	2.7	2.84	2.92	4.34	4	0.12	Cv, Ig, Pu
63	3.9	3.26	3.84	4.64	4.3	2.06	
64	17.6	5.08	6.36	4.1	12.9	10.04	
65	26.95	4.98	10.5	2.46	24.4	38.74	Cv, Hi, Pu
66	99.8	29.5	73.5	8	119.5	75.3	Hs, Sa
67	24.23	8.88	34.32	3.3	45.7	18.43	Cv, Hs
68	27.5	9.2	29.28	11.1	45	9.88	Hs
69	2.1	1.8	3.44	5.46	3	iz	Hc
70	3	1.5	3.82	3.62	4	1	Ig
71	1.8	4.32	1.8	6.68	3	iz	Po
72	1.5	3.6	2.12	6.1	2.6	iz	Cv, Hc, Hs
73	2.7	3.58	4.08	7.28	5.2	iz	Cv
74	5.1	2.8	5.6	7.4	4.1	2	Cv
75	3.9	3.38	4.16	6.7	4.4	0.4	Cv, Po
76	1.5	2.44	2.82	6.48	3	iz	
77	2.1	1.2	3.18	3.4	2.8	0.3	
78	2.1	2.32	4.18	6	3	iz	In
79	-	-	-	-	-	-	Hn

Appendix C Ostracod taxa identified in different water bodies in the Turkish Republic of Northern Cyprus (including cf. and sp. identifications). The sites' ecological and environmental data present in Appendix A and B. Abbreviations: St No: site number, Brsp.: *Bradleystrandesia* sp., Casp.: *Cavernocypris* sp., Cpsp.: *Cypris* sp., Cycf.sp.: *Cyprideis* cf. sp., Ctcf.: *Cyprideis* cf. *torosa*, Cycf.sp.: *Cypridopsis* cf. sp., Cysp.: *Cypridopsis* sp., Cvcf.: *Cypridopsis* cf. *vidua*, Elcf.: *Eucypris* cf. n.sp.2, Evcf.: *Eucypris* cf. *virens*, Eusp.: *Eucypris* sp., Fbsp.: *Fabeaformis* sp., Ffcf.: *Fabeaformis* cf. *fabeaformis*, Hesp.: *Herpetocypris* sp., Hncf.: *Heterocypris* cf. *incongruens*, Hscf.: *Heterocypris* cf. *salina*, Htsp.: *Heterocypris* sp., Ibcf.: *Ilyocypris* cf. *bradyi*, Igcf.: *Ilyocypris* cf. *gibba*, Incf.: *Ilyocypris* cf. *inermis*, Ilsp.: *Ilyocypris* sp., Issp.: *Isocypris* sp., Licf.: *Limnocythere* cf. *inopinata*, Lpcf.: *Loculicytheretta* cf. *pavonia*, Lgcf.: *Loxoconcha* cf. *galilea*, Plsp.: *Plesiocypridopsis* sp., Pzcf.: *Prinocypris* cf. *zenkeri*, Prsp.: *Prinocypris* sp., Pesp.: *Pseudocandona* sp., Pysp.: *Psychrodromus* sp., Sacf.: *Sarscypridopsis* cf. *aculeata*, Secf.sp.: *Semicytherura* cf. sp., Sssp.: *Stenocypris* sp., Tccf.: *Trajancypris* cf. *clavata*, Trsp.: *Trajancypris* sp., Zncf.sp.: *Zonacypris* cf. sp.

Appendix C (Continued)

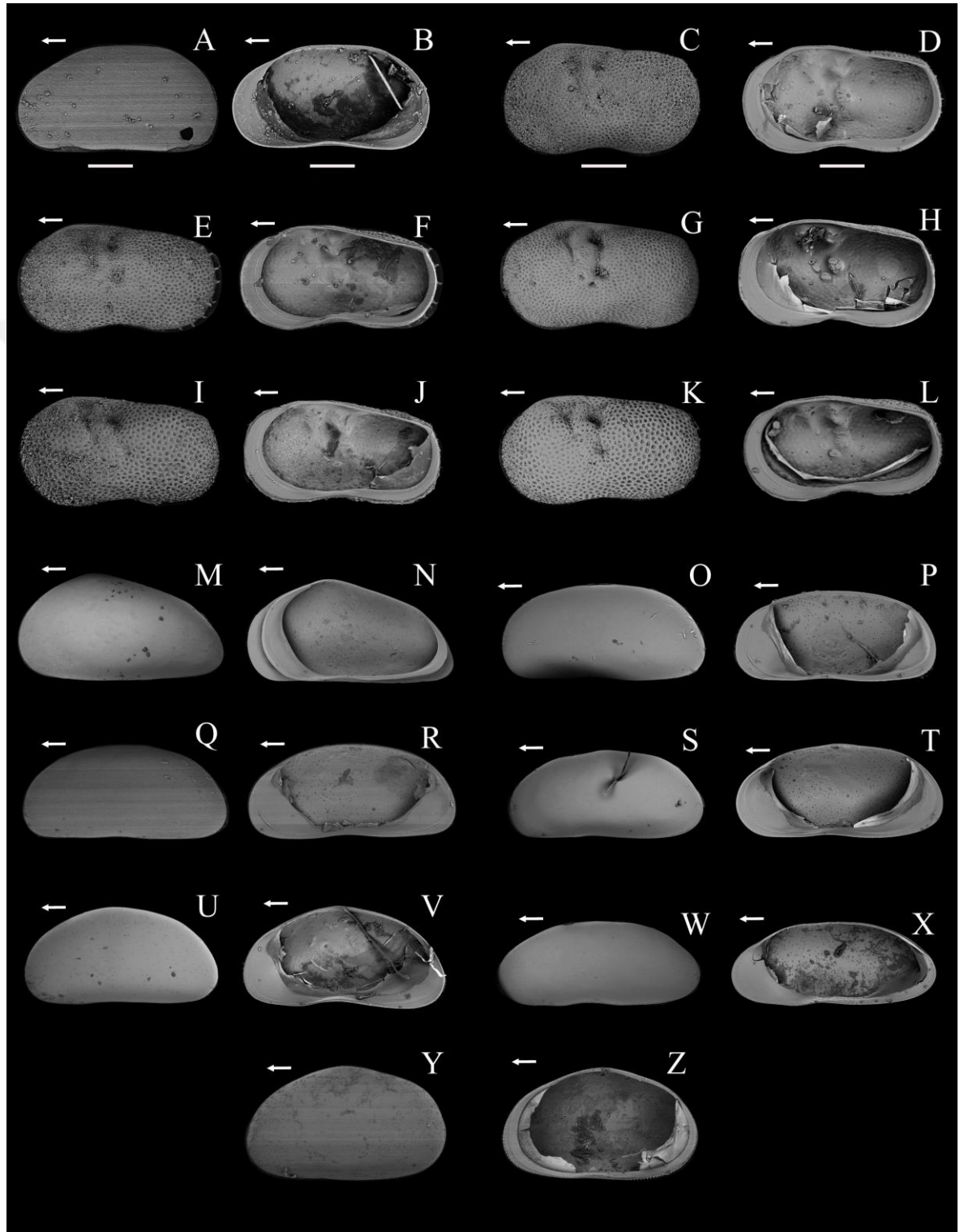
St No	Taxa	St No	Taxa	St No	Taxa
1	Cvcf., Cysp., Eusp., Trsp., Zncf.sp.	15	Cycf.sp, Cysp., Eusp.	29	Hscf., Ilsp., Trsp.
2		16	Ilsp.	30	
3	Cycf.sp., Ilsp.	17	Casp.	31	Brsp.
4	Cysp., Pesp.	18	Ilsp., Lgcf., Secf.sp.	32	Hscf., Incf., Ilsp., Pesp
5	Cvcf.	19		33	Hncf.
6		20		34	
7		21	Pesp.	35	
8	Htsp., Ibcf., Licf.	22		36	Casp.
9	Cycf.sp., Htsp.	23	Ctcf., Ilsp., Licf.	37	
10	Lpcf.	24	Evcf., Ilsp.	38	Trsp.
11	Htsp.	25		39	Pesp.
12		26	Fbsp., Hscf.	40	Cpsp., Hesp.
13	Ilsp.	27	Cysp., Ilsp.	41	Eusp., Pesp
14	Cysp.	28		42	Eusp.

Appendix C (Continued)

St No	Taxa	St No	Taxa	St No	Taxa
43		57	Pesp.	71	Hscf.
44		58	Eusp., Hncf., Htsp., Ibcf., Ilsp., Pesp., Trsp.	72	Ibcf.
45	Hncf., Igcf.	59		73	Casp., Hncf., Hscf.
46	Hesp.	60	Cvcf.	74	Ffcf., Pesp.
47	Cysp.	61		75	Htsp.
48		62	Hscf., Htsp., Ilsp.	76	Ilsp., Pysp.
49		63	Cysp., Htsp., Ilsp., Pesp.	77	Eusp., Ilsp., Sssp.
50	Elcf., Hesp., Pzcf., Trsp.	64	Ctcf., Cvcf., Hncf., Sacf.	78	Pysp.
51	Htsp., Ilsp.	65	Hncf., Plsp., Pzcf., Pesp.	79	
52	Hesp.	66	Cysp., Ilsp., Licf.		
53		67	Hesp., Htsp., Licf., Prsp., Tccf.		
54	Htsp.	68			
55	Hesp., Ilsp.	69	Cysp., Hscf., Ilsp., Sacf.		
56	Issp.	70	Htsp.		

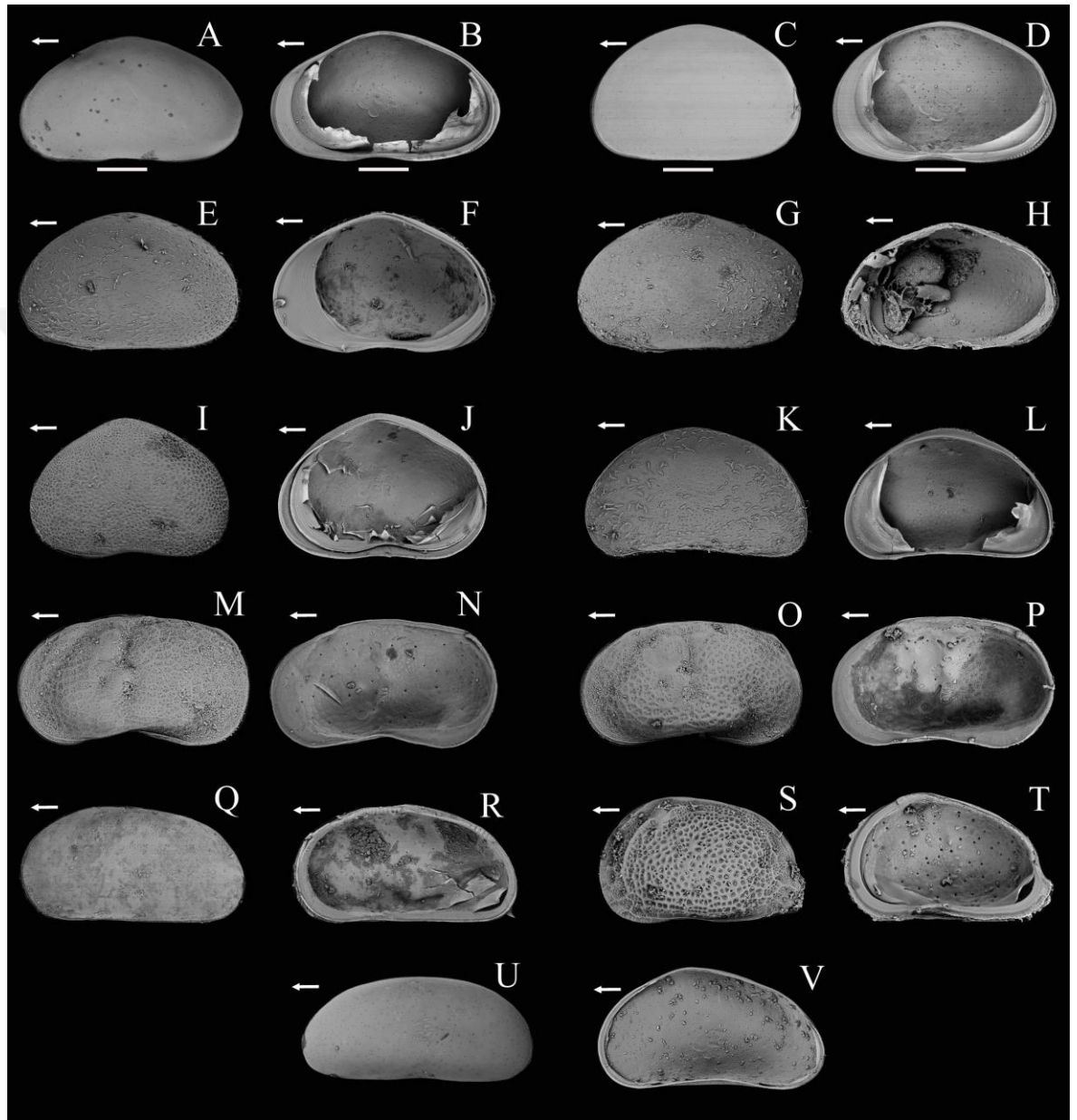
Appendix D SEM list of non-marine Ostracoda from the Northern Cyprus. Abbreviations: (A) LV, external view of *P. albicans* and (B) RV, internal view of *P. albicans*. (C) LV, external view of *I. gibba* and (D) RV, internal view of *I. gibba*. (E) LV, external view of *I. monstifica* and (F) RV, internal view of *I. monstifica*. (G) LV, external view of *I. decipiens* and (H) RV, internal view of *I. decipiens*. (I) LV, external view of *I. inermis* and (J) RV, internal view of *I. inermis*. (K) LV, external view of *I. bradyi* and (L) RV, internal view of *I. bradyi*. (M) LV, external view of *T. clavata* and (N) RV, internal view of *T. clavata*. (O) LV, external view of *H. brevicaudata* and (P) RV, internal view of *H. brevicaudata*. (Q) LV, external view of *H. chevreuxi* and (R) RV, internal view of *H. chevreuxi*. (S) LV, external view of *H. intermedia* and (T) RV, internal view of *H. intermedia*. (U) LV, external view of *P. olivaceus* and (V) RV, internal view of *P. olivaceus*. (W) LV, external view of *S. major* and (X) RV, internal view of *S. major*. (Y) LV, external view of *H. incongruens* and (Z) RV, internal view of *H. incongruens*. Scale bars: 150 μm for A, B, C, D, E, F, K, L, I, J. 200 μm for G, H. 240 μm for U, V, Y, Z. 300 μm for O, P, Q, R. 400 μm for M, N, S, T, W, X. Arrows indicate the anterior site.

Appendix D (Continued)



Appendix E SEM list of non-marine Ostracoda from the Northern Cyprus. Abbreviations: List of non-marine Ostracoda from the Northern Cyprus. (A) LV, external view of *H. barbara* and (B) RV, internal view of *H. barbara*. (C) LV, external view of *H. salina* and (D) RV, internal view of *H. salina*. (E) LV, external view of *C. vidua* and (F) RV, internal view of *C. vidua*. (G) LV, external view of *C. elongata* and (H) RV, internal view of *C. elongata*. (I) LV, external view of *S. aculeata* and (J) RV, internal view of *S. aculeata*. (K) LV, external view of *P. smaragdina* and (L) RV, internal view of *P. smaragdina*. (M) LV, external view of *L. inopinata* and (N) RV, internal view of *L. inopinata*. (O) LV, external view of *P. relictata* and (P) RV, internal view of *P. relictata*. (Q) LV, external view of *C. torosa* and (R) RV, internal view of *C. torosa*. (S) LV, external view of *T. amnicola* and (T) RV, internal view of *T. amnicola*. (U) LV, external view of *H. reptans*. (V) RV, internal view of *P. unicaudata*. Scale bars: 120 µm for E, F, G, H, M, N, O, P, V. 150 µm for I, J, K, L, S, T. 200 µm for D, Q. 240 µm for C, R. 300 µm for A, B, U. Arrows indicate the anterior site.

Appendix E (Continued)



Appendix F Tolerance and optimum value of 17 species and two ecological and seven chemical variables from the Northern Cyprus. Abbreviations: Name: Codes of species names, Cnt: Species' existence, Mx: maximum existence of species, N2: coefficient of Hill's, uk: optimum, tk: tolerance, pH, EC: electrical conductivity (ms), Tw: temperature of water (°C), Ele: Elevation (m a.s.l), Na⁺: Sodium, Ca²⁺: Calcium, Mg²⁺: Magnesium, HCO₃⁻: Bicarbonat, Cl⁻: Chlorine, *El: *Eucypris* n.sp.2, Ct: *C. torosa*, Cv: *C. vidua*, Hc: *H. chevreuxi*, Hn: *H. incongruens*, Hs: *H. salina*, Ib: *I. bradyi*, Id: *I. decipiens*, In: *I. inermis*, Im: *I. monstifica*, Ig: *I. gibba*, Li: *L. inopinata*, Pa: *P. albicans*, Pu: *P. sucki*, Po: *P. olivaceus*, Sa: *S. aculeata*, Tc: *T. clavata*.

Appendix F (Continued)

Name	Cnt	Mx	N2	pH		EC		Tw		Ele		Na ⁺	
				uk	tk	uk	tk	uk	tk	uk	tk	uk	tk
*El	5	30	1.87	8.08	0.47	29.11	7.389	19.55	3.45	146.6	61.7	271	61.1
Ct	9	1700	1.5	9.2	0.58	34.91	10.71	25.51	1.28	0.379	9.11	283	86.1
Cv	22	350	5.91	8.71	0.91	2.613	4.624	24.47	5.07	179.8	101	11.5	21.5
Hc	5	145	3.22	7.79	2.25	1.257	1.578	12.69	14.3	21.55	89	12.9	8.24
Hn	17	200	3.94	8.4	0.78	3.714	6.045	22.94	4.47	150.7	114	28.6	54.9
Hs	26	900	5.18	8.04	0.64	3.389	5.671	14.15	12.7	84.57	67.5	26.6	44.4
Ib	2	5	1.88	7.94	1.46	3.983	3.414	23.37	0.94	152.7	35.3	13.6	5.97
Id	3	3	2.57	8.14	0.73	2.764	1.79	22.61	6.07	114.3	101	26.9	14.1
In	6	70	2.86	8.17	0.4	0.742	0.899	14.88	13.7	33.94	43.8	9.47	10.6
Im	4	2000	1.02	8.48	0.25	8.536	5.104	21.11	8.83	12.8	45.1	23.5	5.8
Ig	19	402	6.99	8.58	0.63	5.94	6.934	24.44	2.47	137.8	47.8	37.7	66
Li	4	350	1.51	8.45	0.65	6.014	0.986	23.1	1	158.3	22.2	18.4	5.34
Pa	2	2	1.8	7.49	1.15	2.061	2.175	23.39	4.65	19.66	41.7	3.85	1.16
Pu	2	5	1.38	8.3	0.84	1.173	2.437	27.91	5.93	172.5	14.8	6.74	17.1
Po	2	115	1.05	8.48	0.08	0.772	0.191	17.87	6.39	278.7	89.8	1.85	1.48
Sa	15	300	3.98	8.49	0.5	15.15	10.43	23.05	3.66	110.3	65.2	128	105
Tc	4	3	3.52	8.16	0.63	2.6	2.128	21.41	4.83	111	104	12.2	16

Appendix F (Continued)

Name	Cnt	Mx	N2	Ca ⁺²		Mg ⁺²		HCO ₃ ⁻		Cl ⁻	
				uk	tk	uk	tk	uk	tk	uk	tk
*El	5	30	1.87	20.6	4.99	119.3	35.77	6.94	1.45	236.3	108.4
Ct	9	1700	1.5	17.3	2.56	105.1	29.98	5.46	1.29	455.4	179.2
Cv	22	350	5.91	4.14	2.83	8.563	13.87	4.86	2.14	12.79	33.02
Hc	5	145	3.22	6.33	5.15	5.74	1.784	6.92	4.13	17.77	10.57
Hn	17	200	3.94	4.88	7.72	15.75	29.22	5.24	2.48	36.44	78.52
Hs	26	900	5.18	4.78	5.76	18.15	20.97	7.89	2.69	26.98	40.09
Ib	2	5	1.88	6.72	8.23	20.82	26.44	4.93	1.52	46.32	59.82
Id	3	3	2.57	2.31	2.44	10.69	7.404	6.39	3.37	16.05	8.97
In	6	70	2.86	4.49	3.81	5.652	2.42	6.5	4.64	12.26	13.68
Im	4	2000	1.02	73.3	49.5	94.45	63.45	4.53	2.63	60.41	19.99
Ig	19	402	6.99	7.29	6.66	22.21	28.79	4.08	1.46	38.72	56.54
Li	4	350	1.51	5.38	7.16	20.68	19.41	4.38	0.76	37.54	50.77
Pa	2	2	1.8	19.2	18.6	0.453	0.367	4.22	0.65	4.733	2.474
Pu	2	5	1.38	3.19	1.51	4.183	5.359	4.02	1.32	7.4	14.42
Po	2	115	1.05	4.29	0.66	1.86	1.668	6.68	0.01	3.035	0.867
Sa	15	300	3.98	11.9	12.9	61.83	42.37	5.2	1.65	102.3	95.45
Tc	4	3	3.52	2.58	2.5	11.92	9.153	8.87	3.51	16.08	11.54

Appendix G Nonparametric Spearman Rank Correlation analysis in Northern Cyprus summary table containing eight species El: *Eucpris* n.sp.2, Ct: *Cyprideis torosa*, Cv: *Cypridopsis vidua*, Hc: *Herpetocypris chevreuxi*, Hn: *Heterocypris incongruens*, In: *Ilyocypris inermis*, Pa: *Pseudocandona albicans*, Sa: *Sarscypridopsis aculeata* and nine environmental and chemical data (pH, EC: Electrical Conductivity, Tw: Water Temperature, Ele: Elevation, Na⁺: Sodium, Ca⁺²: Calcium, Mg⁺²: Magnesium, HCO₃⁻: Bicarbonat and Cl⁻: Chlorine) containing only positive and negative correlations.

Appendix G (Continued)

		pH	Ec	Tw	Ele	Na ⁺	Ca ⁺²	Mg ⁺²	HCO ₃ ⁻	Cl ⁻	El	Ct	Cv	Hc	Hn	In	Pa	Sa
pH	Correlation Coefficient	1.000	.047	.474**	-.037	.095	-.010	.021	-.234	.066	-.007	.179	.175	-.124	.031	-.169	-.086	.248*
	Sig. (2-tailed)		.710	.000	.767	.449	.938	.871	.060	.603	.956	.153	.163	.325	.808	.179	.494	.046
	N	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Ec	Correlation Coefficient	.047	1.000	.212	-.330**	.851**	.724**	.885**	.126	.904**	.371**	.313*	-.102	-.288*	.126	-.187	-.126	.561**
	Sig. (2-tailed)	.710		.090	.007	.000	.000	.000	.318	.000	.002	.011	.417	.020	.318	.136	.318	.000
	N	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Tw	Correlation Coefficient	.474**	.212	1.000	-.223	.136	.041	.095	-.308*	.051	-.108	.150	.285*	-.209	-.251*	-.200	.031	.045
	Sig. (2-tailed)	.000	.090		.074	.280	.748	.452	.013	.685	.392	.234	.022	.096	.044	.110	.808	.725
	N	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65

Appendix G (Continued)

		pH	Ec	Tw	Ele	Na ⁺	Ca ⁺²	Mg ⁺²	HCO ₃ ⁻	Cl ⁻	El	Ct	Cv	Hc	Hn	In	Pa	Sa
Ele	Correlation Coefficient	-.037	-.330**	-.223	1.000	-.386**	-.302*	-.272*	-.077	-.326**	-.014	-.369**	.075	-.078	.138	-.255*	-.175	-.110
	Sig. (2-tailed)	.767	.007	.074		.001	.014	.029	.542	.008	.914	.003	.550	.539	.274	.040	.164	.383
	N	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Na ⁺	Correlation Coefficient	.095	.851**	.136	-.386**	1.000	.587**	.875**	.257*	.886**	.377**	.244*	-.030	-.193	.123	-.215	-.145	.496**
	Sig. (2-tailed)	.449	.000	.280	.001		.000	.000	.039	.000	.002	.050	.811	.123	.330	.085	.249	.000
	N	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Ca ⁺²	Correlation Coefficient	-.010	.724**	.041	-.302*	.587**	1.000	.620**	.030	.711**	.213	.253*	-.091	-.056	-.026	.066	.046	.480**
	Sig. (2-tailed)	.938	.000	.748	.014	.000		.000	.812	.000	.089	.042	.470	.660	.838	.602	.714	.000
	N	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65

Appendix G (Continued)

		pH	Ec	Tw	Ele	Na ⁺	Ca ⁺²	Mg ⁺²	HCO ₃ ⁻	Cl ⁻	El	Ct	Cv	Hc	Hn	In	Pa	Sa
Mg ⁺²	Correlation Coefficient	.021	.885**	.095	-.272*	.875**	.620**	1.000	.281*	.917**	.387**	.201	-.098	-.216	.091	-.166	-.283*	.564**
	Sig. (2-tailed)	.871	.000	.452	.029	.000	.000		.023	.000	.001	.108	.436	.084	.473	.186	.023	.000
	N	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65
HCO ₃ ⁻	Correlation Coefficient	-.234	.126	-.308*	-.077	.257*	.030	.281*	1.000	.237	.194	-.017	-.069	.066	.108	-.040	-.129	.066
	Sig. (2-tailed)	.060	.318	.013	.542	.039	.812	.023		.057	.121	.894	.583	.603	.390	.749	.307	.600
	N	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Cl ⁻	Correlation Coefficient	.066	.904**	.051	-.326**	.886**	.711**	.917**	.237	1.000	.377**	.318**	-.108	-.151	.156	-.148	-.193	.550**
	Sig. (2-tailed)	.603	.000	.685	.008	.000	.000	.000	.057		.002	.010	.392	.229	.213	.238	.123	.000
	N	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65

Appendix H Ostracoda species diagnosed in Mersin province (Türkiye) and their references.



Appendix H (Continued)

Species	References
<i>Candona neglecta</i> Sars, 1887	Dalgakıran et al. (2020)
<i>Candona weltneri</i> Hartwig, 1899	Dalgakıran et al. (2020)
<i>Cypria ophtalmica</i> (Jurine, 1820)	Dalgakıran et al. (2020)
<i>Cyprideis torosa</i> (Jones, 1850)	Yavuzatmaca (2022)
<i>Cypridopsis vidua</i> (Müller, 1776)	Yavuzatmaca (2022)
<i>Cypris pubera</i> Müller, 1776	Dalgakıran et al. (2020)
<i>Darwinula stevensoni</i> (Brady and Robertson 1870)	Dalgakıran et al. (2020)
<i>Eucypris inflata</i> (Sars, 1903)	Altınsaçlı and Griffiths (2002)
<i>Eucypris virens</i> (Jurine, 1820)	Altınsaçlı and Griffiths (2002)
<i>Herpetocypris brevicaudata</i> Kaufmann, 1900	Yavuzatmaca (2022)
<i>Herpetocypris helenae</i> G.W. Müller, 1908	Yavuzatmaca (2022)
<i>Herpetocypris intermedia</i> Kaufmann, 1900	Yavuzatmaca (2022)
<i>Herpetocypris reptans</i> (Baird, 1835)	Yavuzatmaca (2022)
<i>Heterocypris incongruens</i> (Ramdohr, 1808)	Yavuzatmaca (2022)
<i>Heterocypris reptans</i> (Kaufmann, 1900)	Dalgakıran et al. (2020)
<i>Heterocypris rotundata</i> (Bronstein, 1928)	Dalgakıran et al. (2020)
<i>Heterocypris salina</i> (Brady, 1868)	Yavuzatmaca (2022)
<i>Ilyocypris bradyi</i> Sars, 1890	Yavuzatmaca (2022)

Appendix H (Continued)

Species	Refereces
<i>Ilyocypris decipiens</i> Masi, 1905	Yavuzatmaca (2022)
<i>Ilyocypris gibba</i> (Ramdohr, 1808)	Dalgakıran et al. (2020)
<i>Ilyocypris inermis</i> Kaufmann, 1900	Yavuzatmaca (2022)
<i>Ilyocypris monstifica</i> (Norman, 1862)	Dalgakıran et al. (2020)
<i>Isocypris beauchampi</i> (Paris, 1920)	Dalgakıran et al. (2020)
<i>Limnocythere inopinata</i> (Baird, 1843)	Yavuzatmaca (2022)
<i>Plesiocypridopsis newtoni</i> (Brady and Robertson, 1870)	Dalgakıran et al. (2020)
<i>Potamocypris arcuata</i> (Sars, 1903)	Dalgakıran et al. (2020)
<i>Potamocypris fallax</i> Fox, 1967	Dalgakıran et al. (2020)
<i>Potamocypris similis</i> G.W. Müller, 1912	Yavuzatmaca (2022)
<i>Potamocypris smaragdina</i> Furtos, 1933	Yavuzatmaca (2022)
<i>Potamocypris variegata</i> (Brady and Norman, 1889)	Dalgakıran et al. (2020)
<i>Potamocypris villosa</i> (Jurine, 1820)	Dalgakıran et al. (2020)
<i>Prionocypris zenkeri</i> (Chyzer & Toth, 1858)	Yavuzatmaca (2022)
<i>Pseudocandona albicans</i> (Brady, 1864)	Yavuzatmaca (2022)
<i>Psychrodromus fontinalis</i> (Wolf, 1920)	Dalgakıran et al. (2020)
<i>Psychrodromus olivaceus</i> (Brady and Norman, 1889)	Yavuzatmaca (2022)
<i>Stenocypris intermedia</i> Klie, 1932	Yavuzatmaca (2022)
<i>Tonnacypris lutaria</i> (Koch, 1838)	Altınsalı and Griffiths (2002)

Appendix I List and references of ostracods taxa from 37 Mediterranean islands based of literature researches and data obtained from this study. Abbreviations: *: species identified using carapace/valve, **: possible new species recorded in the Northern Cyprus in this study, ***: this is the first species described from an island among the islands examined in this study. Islands abbreviations: 1: Balearic islands, 2: Minorca, 3: Mallorca, 4: Ibiza, 5: Sardinia, 6: Corsica, 7: Vulcano, 8: Lipari, 9: Ustica, 10: Sicily, 11: Levanzo, 12: Favignana, 13: Marettimo, 14: Pantelleria, 15: Lampedusa, 16: Linosa, 17: Gozo (Maltase), 18: Manoel (Maltase), 19: Maltese, 20: Cres, 21: Pag, 22: Mljet, 23: Corfu, 24: Zakynthos, 25: Kythira, 26: Crete, 27: Milos, 28: Santorini, 29: Thirasia (Santorini), 30: Paros, 31: Naxos, 32: Euboa, 33: Skyros, 34: Gökçeada, 35: Lesbos, 36: Kos, 37: Cyprus. Referances abbreviations: Aa: Medlycott, 1870, in Baldacchino, 1983, Ab: Stephanides, 1937, Ac: Klie, 1941, in Marrone et al., 2019, Ad: Stephanides, 1948, in Danielopol, 1981, Ae: Stephanides, 1948, in Altınsaçlı and Griffiths, 2002, Af: Stephanides 1948, in Pieri et al., 2006, Ag: Stephanides, 1948, in Kempf, 2016, Ah: Margalef, 1952, in Kempf, 2016, Ai: Stephanides1960, in Pieri et al., 2006, Aj: Ducloz, 1972, Ak: Meulenkamp et al., 1977, in Cosentino et al., 2007, Al: Danielopol, 1981, Am: Danielopol 1981b, in Mazzini et al., 2017, An: Baldacchino, 1983, Ao: Mostafawi, 1988, in Ligios et al., 2009, Ap: Mostafawi, 1990, in Ligios et al., 2009, Aq: Mostafawi, 1994, in Ligios et al., 2009, Ar: Lanfranco S., 1996, in Schembri, 2003, As: Bellavere et al, 1999, in Bellavere et al., 2002, At: Petkowski et al., 2000, Au: Karanovic, 2003, Av: Pieri et al., 2006, Aw: Cosentino et al., 2007, Ax: Pavlopoulos et al., 2007, Ay: Balık et al., 2008, Az: Grossi et al., 2008, Ba: Ligios et al., 2009, Bb: Moya et al., 2009, Bc: Tadesse, 2011, Bd: Karanovic, 2012, Be: Marriner et al., 2012, Bf: Anadon et al., 2013, Bg: Marriner et al., 2014, Bh: Pieri et al., 2015, Bi: Manzi et al., 2016, Bj: Ratto et al., 2016, Bk: Wouters, 2017, Bl: Avramidis et al., 2017, Bm: Mazzini et al., 2017, Bn: Paçal et al., 2017, Bo: Karkani et al., 2018, Bp: Marrone et al., 2019, Bq: Revelles et al., 2019, Br: Mesquita et al., 2020, Bs: Marrone et al., 2020, Bt: Pieri et al., 2020, Bu: Polidorou et al., 2021.

Appendix I (Continued)

Taxa	Island/s Code and References
<i>Bradleyocypris obliqua</i> (Brady, 1868)	5: Bh
<i>Bradleystradensia</i> sp.	37: This study
<i>Candona angulata</i> G.W. Müller, 1900	22: Bc; 37*: Aj
<i>Candona candida</i> (O. F. Müller, 1776)	20: Bj
<i>Candona lactea</i> Baird, 1850	21: Bg; 30*: Bo
<i>Candona cf. lactea</i> Baird, 1850	19: Be
<i>Candona lindneri</i> Petkovski, 1969	10: Bt; 26: Bp
<i>Candona neglecta</i> Sars, 1887	22: Bc; 26: Ac; 33*: Ax; 34: Bn
<i>Candona</i> sp.	6: Bq; 10: Bt; 26: Bp;
<i>Candonocypris novaezelandiae</i> (Baird, 1843)	10: Bt
<i>Candonopsis kingsleii</i> (Brady and Robertson, 1870)	26: Ac
<i>Candonopsis</i> sp.	22: Bc
<i>Cavernocypris</i> sp.	37: This study
<i>Cyclocypris laevis</i> (O.F. Müller, 1776)	10: Bh
<i>Cyclocypris ovum</i> (Jurine, 1820)	5: Bh; 10: Bt
<i>Cyclocypris scrobiculata</i> Klie, 1936	23: Bd
<i>Cypretta turgida</i> (Sars, 1896)	5: Bh
<i>Cypria kerkyrensis</i> (Klie 1936c)	23: Bd
<i>Cypria lacustris</i> Lilljeborg, 1890	23: Ad; 32: Al
<i>Cypria ophtalmica</i> (Jurine, 1820)	5: Bh; 9, 10 and 11: Bt; 20: Bc; 26: Ac

Appendix I (Continued)

Taxa	Island/s Code and References
<i>Cypria</i> sp.	26: Az
<i>Cypria subsalsa</i> Redeke, 1936	10: Bt
<i>Cyprideis agrigentina</i> (Decima, 1964)	26*: Az; 31*: Bi
<i>Cyprideis anlavauxensis</i> (Carbonnel, 1979)	26: Aw
<i>Cyprideis</i> cf. sp.	37: This study
<i>Cyprideis</i> cf. <i>torosa</i> (Jones, 1850)	37: This study
<i>Cyprideis</i> sp.	26: Ak
<i>Cyprideis torosa</i> (Jones, 1850)	1: Bb; 2 and 4: Ah; 5, 19, 31 and 37: Bk; 6*: Bq; 10: Bt; 21: Bg; 22: Bc; 23: Ag; 28* and 29*: Bf; 30*: Bo; 33*: Ax; 34: Bn; 37: This study
<i>Cypridopsis</i> cf. <i>vidua</i>	37: This study
<i>Cypridopsis elongata</i> (Kaufmann, 1900)	5: Bh; 10: Bt; 26: Bp; 37: This study
<i>Cypridopsis hartwigi</i> G. W. Müller, 1900	2: Br; 5: Bh; 10: Bt; 26: Bp
<i>Cypridopsis newtoni</i> (Brady and Robertson, 1870)	23: Ad; 32: Al
<i>Cypridopsis</i> sp.	37: This study
<i>Cypridopsis vidua</i> (O.F. Müller, 1776)	5: Bh; 8, 10, 12 and 14: Bt; 20 and 22: Bc; 26: Bp; 34: Bn; 37: This study
<i>Cypridopsis weneri</i> Brehm, 1928	27: Bd
<i>Cypridopsis</i> cf. sp.	37: This study
<i>Cypris bispinosa</i> Lucas, 1849	2, 3 and 5: Br; 10: Bt; 22: Bc; 26: Bp
<i>Cypris decaryi</i> Gauthier, 1933	1: Av
<i>Cypris pretusi</i> Mesquita et al., 2020	2: Br;
<i>Cypris</i> sp.	37: This study

Appendix I (Continued)

Taxa	Island/s Code and References
<i>Cypris pubera</i> O.F. Müller, 1776	5: Bh; 10: Bt; 18: Aa; 19: Ar; 37: Ay
<i>Cytherissa lacustris</i> (G. O. Sars, 1863)	20: Bc
<i>Darwinula stevensoni</i> (Brady and Robertson, 1870)	5*: Bj; 10 and 13: Bt; 19*: Be; 20: Bc; 30*: Bo; 34: Bn
<i>Eucypis</i> cf. n.sp.2	37: This study
<i>Eucypris</i> cf. <i>virens</i> (Jurine, 1820)	37: This study
<i>Eucypris crassa</i> (O.F. Müller, 1785)	5: Bh
** <i>Eucypris</i> n.sp.1	37: This study
<i>Eucypris elongata</i> Stephanides, 1937	5: Bh; 23: Ab
<i>Eucypris kerkyrensis</i> Stephanides, 1937	10: Bt; 23: Af and Ai; 26: At;
** <i>Eucypris</i> n.sp.2	37: This study
<i>Eucypris lilljeborgi</i> (G.W. Müller, 1900)	5: Bh
<i>Eucypris mareotica</i> (Fischer, 1855)	10: Bt
<i>Eucypris</i> sp.	26: Bp; 37: Ay and this study
<i>Eucypris virens</i> (Jurine, 1820)	1: Bb; 5: Bh; 9, 10, 12, 14 and 15: Bt; 26: Bp; 34: Bn
<i>Fabaeformiscandona krstici</i> (Petkovski, 1969)	32: Al
<i>Fabaeformiscandona</i> sp.	26: Az
<i>Fabaeformis</i> sp.	37: This study
<i>Fabaeformiscandona</i> cf. <i>fabaeformis</i> (Fischer, 1851)	37: This study
<i>Herpetocypris brevicaudata</i> Kaufmann, 1900	5: Bh; 10: Bt; 37: This study
<i>Herpetocypris chevreuxi</i> (Sars, 1896)	1: Bb; 5: Bh; 10: Bt; 26: At; 34*: Bn; 37: This study

Appendix I (Continued)

Taxa	Island/s Code and References
<i>Herpetocypris intermedia</i> Kaufmann, 1900	37***: This study
<i>Herpetocypris helenae</i> G.W. Müller, 1908	5: Bh
<i>Herpetocypris reptans</i> (Baird 1835)	5: Bh; 17: An; 19: Ar; 24*: Bl; 26: Ac; 37: Aj* and This study
<i>Herpetocypris</i> sp.	37: This study
<i>Heterocypris</i> cf. <i>barbara</i> (Gauthier and Brehm, 1928)	12: Bs
<i>Heterocypris</i> cf. <i>incongruens</i> (Ramdohr, 1808)	37: This study
<i>Heterocypris</i> cf. <i>salina</i> (Brady, 1868)	37: This study
<i>Heterocypris barbara</i> (Gauthier and Brehm, 1928)	10: Bh; 26: Bp; 37: This study
<i>Heterocypris incongruens</i> (Ramdohr, 1808)	5: Bh; 7, 9, 10, 11, 12, 14 and 15: Bt; 16: As; 26: At; 34: Bn; 37: This study
<i>Heterocypris reptans</i> (Kaufmann, 1900)	10: Bt
<i>Heterocypris salina</i> (Brady, 1868)	5: Bh; 6*: Bq; 10 and 16: Bt; 22: Bc; 26: At; 30*: Bo; 34: Bn; 37: Bu* and this study
<i>Heterocypris</i> sp.	37: This study
<i>Ilyocypris bradyi</i> Sars, 1890	5: Bh; 10: Bt; 20 and 22: Bc; 24*: Bl; 26: Ac; 32: Al; 33*: Ax; 34: Bn; 37: This study
<i>Ilyocypris</i> cf. <i>bradyi</i> Sars, 1890	37: This study
<i>Ilyocypris</i> cf. <i>gibba</i> (Ramdohr, 1808)	37: This study
<i>Ilyocypris</i> cf. <i>inermis</i> Kaufmann, 1900	37: This study
<i>Ilyocypris decipiens</i> Masi, 1905	10 and 12: Bt; 37: This study
<i>Ilyocypris divisa</i> Klie, 1926	26: Ac
<i>Ilyocypris getica</i> Masi, 1906	9 and 10: Bt; 26: Bp

Appendix I (Continued)

Taxa	Island/s Code and References
<i>Ilyocypris gibba</i> (Ramdohr, 1808)	2: Br; 5: Bh; 10: Bt; 19*: Be; 21: Bg; 26: Bp; 30*: Bo; 33*: Ax; 34: Bn; 37: This study
<i>Ilyocypris inermis</i> Kaufmann, 1900	10: Bt; 37: This study
<i>Ilyocypris monstifica</i> (Norman, 1862)	37***: This study
<i>Ilyocypris</i> sp.	26: Bp; 37: This study
<i>Isocypris beauchampi</i> (Paris, 1920)	10: Bt
<i>Isocypris laskaridisi</i> Herbst, 1951	27: Bd
<i>Isocypris</i> sp.	37: This study
<i>Kliella hyaloderma</i> Schäfer, 1945	26: Bd
<i>Koencypris ornata</i> (O.F. Müller, 1776)	5: Bh
<i>Kovalevskiella dani</i> Karanovic, 2003	35: Au
<i>Kovalevskiella rudjakovi</i> (Danielopol, 1969)	35: Au
<i>Leptocythere</i> cf. <i>lacertosa</i> (Hirschmann, 1912)	19*: Be
<i>Leucocythere mirabilis</i> Kaufmann, 1892	23: Ae
<i>Limnocythere</i> cf. <i>inopinata</i> (Baird, 1843)	37: This study
<i>Limnocythere inopinata</i> (Baird, 1843)	5: Bh; 10: Bt; 34: Bn; 37: This study
<i>Limnocythere</i> sp.	37: Bu
<i>Limnocytherina sanctipatricii</i> (Brady and Robertson 1869)	24: Bl
<i>Loxoconcha</i> cf. <i>galilea</i> Lerner and Seggev, 1968	37: This study
<i>Loxoconcha elliptica</i> Brady, 1868	1: Bb; 6*: Bq; 34: Bn
<i>Metacypris cordata</i> Brady and Robertson, 1870	20: Bc;
<i>Mixtacandona cottarellii</i> Danielopol, 1982	5: Am

Appendix I (Continued)

Taxa	Island/s Code and References
<i>Mixtacandona idrisi</i> Mazzini and Rossetti, 2017	10: Bm
<i>Mixtacandona pseudocrenulata</i> (Schäfer, 1945)	32: Al
<i>Nannokliella dictyoconcha</i> Schäfer, 1945	26: Bd
<i>Neglecandona lindneri</i> (Petkovski, 1969)	10: Av
<i>Neglecandona neglecta</i> (Sars, 1887)	10: Bt
<i>Notodromas monacha</i> (O.F. Müller, 1776)	5: Bh
<i>Notodromas persica</i> Gurney, 1921	5 and 10: Bh
<i>Paralimnocythere psammophila</i> (Flössner, 1965)	26: Bp
<i>Paralimnocythere relict</i> a (Lilljeborg, 1863)	37***: This study
<i>Physocypris kerkyrensis</i> Klie, 1936	10: Bt; 23: Af and Ai
<i>Plesiocypridopsis newtoni</i> (Brady and Robertson, 1870)	5: Bh; 9, 10, 11, 12, 13 and 15: Bt; 26: Ac
<i>Plesiocypridopsis</i> sp.	37: This study
<i>Plesiocypridopsis thermarum</i> (Tagliasacchi-Masala, 1968)	5: Bd
<i>Potamocypris arcuata</i> (Sars, 1903)	5: Bh; 9, 10, 12 and 15: Bt; 26: Bp; 34: Bn
<i>Potamocypris smaragdina</i> (Vávra, 1891)	5: Bh; 37: This study
<i>Potamocypris</i> cf. <i>villosa</i> (Jurine, 1820)	10: Bt; 21: Bg
<i>Potamocypris similis</i> G.W. Müller, 1912	30*: Bo
<i>Potamocypris steueri</i> Klie, 1935	5: Bd
<i>Potamocypris variegata</i> (Brady and Norman, 1889)	19*: Be; 30*: Bo
<i>Potamocypris unicaudata</i> Schaefer, 1943	37***: This study

Appendix I (Continued)

Taxa	Island/s Code and References
<i>Potamocypris villosa</i> (Jurine, 1820)	5: Bh; 10: Bt; 34: Bn
<i>Prinocypris</i> sp.	37: This study
<i>Prionocypris</i> cf. <i>zenkeri</i> (Chyzer and Toth, 1858)	37: This study
<i>Prionocypris zenkeri</i> (Chyzer and Toth, 1858)	5: Bh; 10: Bt
<i>Pseudocandona albicans</i> (Brady, 1864)	6*: Bq; 10: Bt; 37: This study
<i>Pseudocandona compressa</i> (Koch, 1838)	34: Bn
<i>Pseudocandona hartwigi</i> (G.W. Müller, 1900)	20: Bc
<i>Pseudocandona pratensis</i> (Hartwig, 1901)	5: Bh; 26: Ac
<i>Pseudocandona</i> sp.	37: This study
<i>Pseudocandona sucki</i> (Hartwig, 1901)	37***: This study
<i>Pseudolimnocythere hartmanni</i> Danielopol, 1979	32: Al
<i>Psychrodromus fontinalis</i> (Wolf, 1920)	10: Bh
<i>Psychrodromus olivaceus</i> (Brady and Norman, 1889)	5: Bh; 34: Bn; 37: This study
<i>Psychrodromus</i> sp.	37: This study
<i>Sarscypridopsis aculeata</i> (Costa, 1847)	1: Bb; 2: Br; 5: Bh; 7 and 10: Bt; 26: Bp; 37: This study
<i>Sarscypridopsis</i> cf. <i>aculeata</i> (Costa, 1847)	37: This study
<i>Sarscypridopsis lanzarotensis</i> (Mallwitz 1984)	2: Br
<i>Semicytherura</i> cf. sp.	37: This study
<i>Stenocypris fischeri</i> (Lilljeborg, 1883)	26: Bp
<i>Stenocypris fontinalis</i> (Vávra, 1895)	5: Bh

Appendix I (Continued)

Taxa	Island/s Code and References
<i>Stenocypris major</i> (Baird, 1859)	5: Bh; 32: Al; 37: This study
<i>Stenocypris</i> sp.	37: This study
<i>Strandesia reticulata</i> (Dad ay, 1898)	5: Bh
<i>Strandesia spinulosa</i> Bronstein, 1958	5: Bh
<i>Tonnacypris lutaria</i> (Koch, 1838)	5: Bh; 9 and 10: Bh; 12: Bs; 26: At
<i>Trajancypris</i> cf. <i>clavata</i> (Baird, 1838)	37: This study
<i>Trajancypris clavata</i> (Baird, 1838)	10: Bt; 37: Ay and this study
<i>Trajancypris</i> sp.	37: This study
<i>Tyrrhenocythere amnicola</i> (Sars, 1887)	10: Bt; 37: This study
<i>Vestalenula boteai</i> (Danielopol, 1970)	10: Bt
<i>Vestalenula cylindrica</i> (Straub, 1952)	25: Ap; 32: Aq; 36: Ao
<i>Vestalenula pliocenica</i> Ligios et al., 2009	26*: Ba
<i>Zonacypris</i> cf. sp.	37: This study

Appendix J List of ostracods identified from living individuals (Diagnostics from valves, carapace, cf. and sp. excluded) and the 32 Mediterranean islands where Ostracoda were recorded. The Balearic Islands consist of four islands: Majorca, Minorca, Ibiza, Formentera. The list of references is the same as in Appendix I. Abbreviations: *: this is the first species diagnosed from an island among the islands examined in this study, **: new species recorded in the Northern Cyprus in the study.



Appendix J (Continued)

Species	Island/s
<i>Bradleycypris obliqua</i> (Brady, 1868)	Sardinia
<i>Candona angulata</i> G.W. Müller, 1900	Mljet
<i>Candona candida</i> (O. F. Müller, 1776)	Cres
<i>Candona lactea</i> Baird, 1850	Pag
<i>Candona lindneri</i> Petkovski, 1969	Sicily and Crete
<i>Candona neglecta</i> Sars, 1887	Mljet, Crete and Gökçeada
<i>Candonocypris novaezelandiae</i> (Baird, 1843)	Sicily
<i>Candonopsis kingsleii</i> (Brady and Robertson, 1870)	Crete
<i>Cyclocypris laevis</i> (O.F. Müller, 1776)	Sicily
<i>Cyclocypris ovum</i> (Jurine, 1820)	Sardinia and Sicily
<i>Cyclocypris scrobiculata</i> Klie, 1936	Corfu
<i>Cypretta turgida</i> (Sars, 1896)	Sardinia
<i>Cypria kerkyrensis</i> (Klie 1936)	Corfu
<i>Cypria lacustris</i> Lilljeborg, 1890	Corfu and Euboa
<i>Cypria ophtalmica</i> (Jurine, 1820)	Sardinia, Ustica, Sicily, Levanzo, Cres and Crete
<i>Cypria subsalsa</i> Redeke, 1936	Sicily
<i>Cyprideis anlavauxensis</i> (Carbonnel, 1979)	Crete
<i>Cyprideis torosa</i> (Jones, 1850)	Balearic Islands, Minorca, Ibiza, Sardinia, Sicily, Maltese, Pag, Mljet, Corfu, Naxos, Gökçeada and Cyprus
<i>Cypridopsis elongata</i> (Kaufmann, 1900)	Sardinia, Sicily, Crete and Cyprus
<i>Cypridopsis hartwigi</i> G. W. Müller, 1900	Minorca, Sardinia, Sicily and Crete

Appendix J (Continued)

Species	Island/s
<i>Cypridopsis newtoni</i> (Brady and Robertson, 1870)	Corfu and Euboa
<i>Cypridopsis vidua</i> (O.F. Müller, 1776)	Sardinia, Lipari, Sicily, Favignana, Pantelleria, Cres, Mljet, Crete, Gökçeada and Cyprus
<i>Cypridopsis wernerii</i> Brehm, 1928	Milos
<i>Cypris bispinosa</i> Lucas, 1849	Minorca, Mallorca, Sardinia, Sicily, Mljet and Crete
<i>Cypris decaryi</i> Gauthier, 1933	Balearic Islands
<i>Cypris pretusi</i> Mesquita et al., 2020	Minorca
<i>Cypris pubera</i> O.F. Müller, 1776	Sardinia, Sicily, Manoel (Maltase), Maltase and Cyprus
<i>Cytherissa lacustris</i> (G. O. Sars, 1863)	Cres
<i>Darwinula stevensoni</i> (Brady and Robertson, 1870)	Sicily, Marettimo, Cres and Gökçeada
<i>Eucypris crassa</i> (O.F. Müller, 1785)	Sardinia
** <i>Eucypris</i> n. sp.1	Cyprus
<i>Eucypris elongata</i> Stephanides, 1937	Sardinia and Corfu
<i>Eucypris kerkyrensis</i> Stephanides, 1937	Sicily, Corfu and Crete
** <i>Eucypris</i> n. sp.2	Cyprus
<i>Eucypris lilljeborgi</i> (G.W. Müller, 1900)	Sardinia
<i>Eucypris mareotica</i> (Fischer, 1855)	Sicily
<i>Eucypris virens</i> (Jurine, 1820)	Balearic Islands, Sardinia, Ustica, Sicily, Favignana, Pantelleria, Lampedusa, Crete and Gökçeada
<i>Fabaeformiscandona krstici</i> (Petkovski, 1969)	Euboa
<i>Herpetocypris brevicaudata</i> Kaufmann, 1900	Sardinia, Sicily and Cyprus
<i>Herpetocypris chevreauxi</i> (Sars, 1896)	Balearic Islands, Sicily, Crete and Cyprus

Appendix J (Continued)

Species	Island
<i>Herpetocypris helenae</i> G.W. Müller, 1908	Sardinia
* <i>Herpetocypris intermedia</i> Kaufmann, 1900	Cyprus
<i>Herpetocypris reptans</i> (Baird, 1835)	Sardinia, Gozo (Maltase), Maltase, Crete and Cyprus
<i>Heterocypris barbara</i> (Gauthier and Brehm, 1928)	Sicily, Crete and Cyprus
<i>Heterocypris incongruens</i> (Ramdohr, 1808)	Sardinia, Vulcano, Ustica, Sicily, Levanzo, Favignana, Pantelleria, Lampedusa, Linosa, Crete, Gökçeada and Cyprus
<i>Heterocypris reptans</i> (Kaufmann, 1900)	Sicily
<i>Heterocypris salina</i> (Brady, 1868)	Sardinia, Sicily, Linosa, Mljet, Crete, Gökçeada and Cyprus
<i>Ilyocypris bradyi</i> Sars, 1890	Sardinia, Sicily, Cres, Mljet, Crete, Euboa, Gökçeada and Cyprus
<i>Ilyocypris decipiens</i> Masi, 1905	Sicily, Favignana and Cyprus
<i>Ilyocypris divisa</i> Klie, 1926	Crete
<i>Ilyocypris getica</i> Masi, 1906	Ustica, Sicily and Crete
<i>Ilyocypris gibba</i> (Ramdohr, 1808)	Minorca, Sardinia, Sicily, Pag, Crete, Gökçeada and Cyprus
<i>Ilyocypris inermis</i> Kaufmann, 1900	Sicily and Cyprus
* <i>Ilyocypris monstifica</i> (Norman, 1862)	Cyprus
<i>Isocypris beauchampi</i> (Paris, 1920)	Sicily
<i>Isocypris laskaridisi</i> Herbst, 1951	Milos
<i>Kliella hyaloderma</i> Schäfer, 1945	Crete
<i>Koencypris ornata</i> (O.F. Müller, 1776)	Sardinia
<i>Kovalevskiella dani</i> Karanovic, 2003	Lesbos
<i>Kovalevskiella rudjakovi</i> (Danielopol, 1969)	Lesbos

Appendix J (Continued)

Species	Island/s
<i>Leucocythere mirabilis</i> Kaufmann, 1892	Corfu
<i>Limnocythere inopinata</i> (Baird, 1843)	Sardinia, Sicily, Gökçeada and Cyprus
<i>Limnocytherina sanctipatricii</i> (Brady and Robertson 1869)	Zakynthos
<i>Loxoconcha elliptica</i> Brady, 1868	Balearic Islands and Gökçeada
<i>Metacypris cordata</i> Brady and Robertson, 1870	Cres
<i>Mixtacandona cottarellii</i> Danielopol, 1982	Sardinia
<i>Mixtacandona idrisi</i> Mazzini and Rossetti, 2017	Sicily
<i>Mixtacandona pseudocrenulata</i> (Schäfer, 1945)	Euboa
<i>Nannokliella dictyoconcha</i> Schäfer, 1945	Crete
<i>Neglecandona lindneri</i> (Petkovski, 1969)	Sicily
<i>Neglecandona neglecta</i> (Sars, 1887)	Sicily
<i>Notodromas monacha</i> (O.F. Müller, 1776)	Sardinia
<i>Notodromas persica</i> Gurney, 1921	Sardinia and Sicily
<i>Paralimnocythere psammophila</i> (Flössner, 1965)	Crete
* <i>Paralimnocythere relicta</i> (Lilljeborg, 1863)	Cyprus
<i>Physocypris kerkyrensis</i> Klie, 1936	Sicily and Corfu
<i>Plesiocypridopsis newtoni</i> (Brady and Robertson, 1870)	Sardinia, Ustica, Sicily, Levanzo, Favignana, Marettimo, Lampedusa and Crete
<i>Plesiocypridopsis thermarum</i> (Tagliasacchi-Masala, 1968)	Sardinia
<i>Potamocypris arcuata</i> (Sars, 1903)	Sardinia, Ustica, Sicily, Favignana, Lampedusa, Crete and Gökçeada
<i>Potamocypris smaragdina</i> (Vávra, 1891)	Sardinia and Cyprus

Appendix J (Continued)

Species	Island/s
<i>Potamocypris steueri</i> Klie, 1935	Sardinia
* <i>Potamocypris unicaudata</i> Schaefer, 1943	Cyprus
<i>Potamocypris villosa</i> (Jurine, 1820)	Sardinia, Sicily and Gökçeada
<i>Prionocypris zenkeri</i> (Chyzer and Toth, 1858)	Sardinia and Sicily
<i>Pseudocandona albicans</i> (Brady, 1864)	Sicily and Cyprus
<i>Pseudocandona compressa</i> (Koch, 1838)	Gökçeada
<i>Pseudocandona hartwigi</i> (G.W. Müller, 1900)	Cres
<i>Pseudocandona pratensis</i> (Hartwig, 1901)	Sardinia and Crete
* <i>Pseudocandona sucki</i> (Hartwig, 1901)	Cyprus
<i>Pseudolimnocythere hartmanni</i> Danielopol, 1979	Euboa
<i>Psychrodromus fontinalis</i> (Wolf, 1920)	Sicily
<i>Psychrodromus olivaceus</i> (Brady and Norman, 1889)	Sardinia, Gökçeada and Cyprus
<i>Sarscypridopsis aculeata</i> (Costa, 1847)	Balearic Islands, Minorca, Sardinia, Volcano, Sicily, Crete and Cyprus
<i>Sarscypridopsis lanzarotensis</i> (Mallwitz, 1984)	Minorca
<i>Stenocypris fischeri</i> (Lilljeborg, 1883)	Crete
<i>Stenocypris fontinalis</i> (Vávra, 1895)	Sardinia
<i>Stenocypris major</i> (Baird, 1859)	Sardinia, Euboa and Cyprus
<i>Strandesia reticulata</i> (Dad ay, 1898)	Sardinia
<i>Strandesia spinulosa</i> Bronstein, 1958	Sardinia
<i>Tonnacypris lutaria</i> (Koch, 1838)	Ustica, Sicily, Favignana and Crete
<i>Trajancypris clavata</i> (Baird, 1838)	Sicily and Cyprus
<i>Tyrrhenocythere amnicola</i> (Sars, 1887)	Sicily and Cyprus
<i>Vestalenula boteai</i> (Danielopol, 1970)	Sicily
<i>Vestalenula cylindrica</i> (Straub, 1952)	Kythira, Euboa and Kos

Appendix K List and references of ostracods taxa from 159 non-Mediterranean islands based of literature researches (in order to access the data more easily and avoid confusion, Dominican, Haitian, New Guinea and Papua New Guinea islands were coded as different islands in the list, and as a result, the data of 161 islands are given below.). Abbreviations: *: species identified using carapace/valve. Islands abbreviations: 1: Easter, 2: Martin Garcia (Río de la Plata), 3: Signy, 4: Falkland Islands, 5: Madre de Dios Archipelago, 6: South Orkney Islands, 7: Galapagos Islands, 8: Santa Cruz, 9: Clipperton, 10: South Georgia, 11: Sandwich Islands, 12: Marco (USA), 13: St. Croix (US Virgin Islands), 14: St. John (US Virgin Islands), 15: Saint Thomas (US Virgin Islands), 16: Virgin Gorda (British Virgin Islands), 17: St. Martin, 18: Martinique, 19: Antigua, 20: Dog, 21: Anegada, 22: Vieques, 23: Curacao, 24: Klein Curacao, 25: Bonaire, 26: Klein Bonaire, 27: Aruba, 28: Tortugillo, 29: La Blanquilla, 30: Iguana (Los Testigos), 31: Los Testigos, 32: Los Roques Archipelago, 33: Cubagua, 34: La Tortuga, 35: Margarita, 36: Grenada, 37: La Désirade, 38: St. Eustatius, 39: Tortola, 40: Culebra, 41: Grand Cayman, 42: Cayman Brac, 43: Providenciales, 44: South Caicos, 45: Mayaguana, 46: Crooked, 47: Bahamas, 48: Eleuthera, 49: Inagua, 50: New Providence, 51: Jamaica, 52: Puerto Rico, 53: Montserrat, 54: Marie Galante, 55: Guadeloupe, 56: Terre De Haut, 57: Santies Islands, 58: Dominica, 59: St. Barthelemy, 60: Saba, 61: Barbuda, 62: Anguilla, 63: Nevis, 64: St. Kitts, 65: Cuba, 66: Dominican, 67: Haiti, 68: St. Vincen, 69: St. Lucia, 70: Barbados, 71: Trinidad, 72: Tobago, 73: San Salvador, 74: Funk (Canada), 75: Madiera Islands, 76: Azores, 77: Lanzarote (Canary Islands), 78: Gran Canaria (Canary Islands), 79: La Gomera (Canary Islands), 80: Tenerife (Canary Islands), 81: Fuerteventura (Canary Islands), 82: La Palma (Canary Islands), 83: El Hierro (Canary Islands), 84: Alegranza (Canary Islands), 85: Oceanic Islands, 86: Hawaii, 87: Nuku Hiva, 88: Futuna, 89: Wallis, 90: Cook, 91: Rangiroa, 92: Samoa (Tonga), 93: Marquesas Islands, 94: Tarawa Atoll, 95: Loyalty Islands, 96: Mare (Loyalty Islands), 97: Ovea (Loyalty Islands), 98: Fiji, 99: Futuna (Vanuatu), 100: Manono, 101: Rennell, 102: Nukunono, (Tokelau), 103: Macquarie, 104: Campbell, 105: Chatham, 106: Stewart, 107: New Zealand, 108: Tasmania, 109: West Wallabi, 110: Rottneest, 111: New Caledonia, 112: Solomon Islands, 113: New Guinea, 114: Papua New Guinea, 115: Motupore, 116: Laing,

Appendix K (Continued) 117: Bismarck Archipelago, 118: New Britain (Bismarck Archipelago), 119: Mecherchar (Palau), 120: Java, 121: Gorong, 122: Sri Lanka, 123: Sulawesi, 124: Panikiang (Sulawesi), 125: Luzon, 126: Mindanao, 127: Hainan, 128: Taiwan, 129: Kohama, 130: Kuroshima, 131: Yonaguni, 132: Hateruma, 133: Yaeyama Islands, 134: Sesoko, 135: Okinawa, 136: Yoron, 137: Tokunoshima, 138: Anami-Oshima, 139: Okinoerabu-shima, 140: Chichi Jima, 141: Yakushima Islands, 142: Jeju, 143: Udo island (Jeju), 144: Sohuksan, 145: Togjok, 146: Ganghwado, 147: Yongjong, 148: Wonsan, 149: Seonyu, 150: Ulleung, 151: Kuril Islands, 152: Vaigach, 153: Novaya Zemlya Archipelago, 154: Silhouette (Seychelles), 155: Grande Comore (Comoro islands), 156: Madagascar, 157: Aldabra, 158: Kerguelen, 159: Crozet, 160: Prince Edward (South Africa), 161: Socotra. Referances abbreviations: Aa: Baird, 1862, Ab: Brady, 1886, Ac: Brady 1890, in Martens et al., 2019, Ad: G. W. Müller, 1898, Ae: Brady, 1902, Af: Vávra, 1906, Ag: Cushman, 1908, Ah: Sharpe, 1910, Ai: Grochmalicki, 1915, Aj: Klie, 1932 in Klie, 1933, Ak: Klie, 1933, Al: Furtos, 1934, in Meisch et al., 2007, Am: Tressler, 1937, in Meisch et al., 2007, An: Klie, 1938b, in Ma and Yu, 2020, Ao: Méhes, 1939, in Martens et al., 2019, Ap: Tressler, 1941, Aq: Brehm, 1953, Ar: Tressler, 1956, As: Van Den Bold, 1958, At: Margalef, 1961, Au: Triebel, 1961, in Scott-Frias et al., 2023, Av: Harding, 1962, in Karanovic and Marmonier, 2002, Aw: Harding, 1962, in Ligios et al., 2009, Ax: Mendis and Fernando, 1962, Ay: Triebel, 1962, in Broodbakker, 1984b, Az: Chapman, 1963, Ba: Chapman, 1966, Bb: Lofthouse, 1967, Bc: Barclay, 1968, Bd: Eagar, 1970, Be: Hobbs, 1971, Bf: Schornikov, 1974, in Smith et al., 2015, Bg: Keyser, 1975, Bh: Harrison and Rankin, 1976, in Broodbakker, 1984a, Bi: Victor and Fernando, 1978 in Meisch et al., 2007, Bj: De Deckker 1979 in Meisch et al., 2007, Bk: Neale, 1979, in Meisch et al., 2007, Bl: McKenzie, 1980, Bm: Schornikov, 1980, in Meisch et al., 2007, Bn: De Deckker, 1981, Bo: Victor and Fernando, 1981a, Bp: Victor and Fernando, 1981b, Bq: Broodbakker, 1982, Br: Chen, 1982, in Ma and Yu, 2020,

Appendix K (Continued) Bs: Mc Kenzie, 1982, Bt: Broodbakker, 1983a, Bu: Broodbakker, 1983b, Bv: Broodbakker, 1983c, Bw: Broodbakker, 1983d, Bx: Victor, 1983, By: Broodbakker, 1984a, Bz: Broodbakker, 1984b, Ca: Hartmann, 1984, in Wouters, 1986, Cb: Hartmann, 1984, in Meisch et al., 2007, Cc: Mallwitz, 1984, Cd: Wouters, 1984, Ce: Wouters, 1986, Cf: Wouters, 1987, Cg: Broodbakker, 1988, Ch: Kim and Min, 1991a, Ci: Kim and Min, 1991b, Cj: Stauder and Meisch, 1991, Ck: Okubo and Terauchi, 1992, Cl: Maddocks, 1992, Cm: Martens, 1992, Cn: Baltanás and Garcia-Aviles, 1993, Co: Maddocks and Iliffe, 1993, Cp: Meisch and Broodbakker, 1993, Cq: Martens and Behen, 1994, Cr: Dumont and Martens, 1996, Cs: Beyer et al., 1997, Ct: Eldredge and Miller, 1997, Cu: Holmes, 1997, Cv: Malmqvist et al., 1997, Cw: Vekhof, 1997 in Bernalaya et al., 2021, Cx: Rossetti and Martens, 1998, Cy: Vekhof 1998, in Bernalaya et al., 2021, Cz: Wouters, 1998, Da: Rossetti and Martens, 1999, Db: Eagar, 2000, Dc: Vekhof 2000, in Bernalaya et al., 2021, Dd: Wouters, 2001, De: Martens and Rossetti, 2002, Df: Pugh et al., 2002, Dg: Wouters, 2002, Dh: Semenova, 2003, in Bernalaya et al., 2021, Di: Mazzini and Sardella, 2004, Dj: Maddocks, 2005, Dk: Smith et al., 2006, Dl: Smith and Kamiya, 2006, Dm: Meisch et al., 2007, Dn: Meyer et al., 2017, Do: Karanovic and Datry, 2009, Dp: Yu et al., 2009, in Smith et al., 2015, Dq: Escrivà et al., 2012, Dr: Karanovic, 2012, Ds: Liberto et al., 2012, Dt: Mohammed et al., 2013, Du: Scharf and Meisch, 2014, Dv: Michelson et al., 2016, Dw: Smith et al., 2015, Dx: Ma and Yu, 2018, in Ma and Yu, 2020, Dy: Martens et al., 2019, Dz: Ma and Yu, 2020, Ea: Bernalaya et al., 2021, Eb: Scott-Frias et al., 2023.

Appendix K (Continued)

Taxa	Island/s Code and References
<i>Alicenula</i> cf. <i>serricaudata</i> (Klie, 1935)	87: Dm
<i>Argentocypris fontana</i> (Graf, 1931)	6: Df; 10: Bn
<i>Amphicypris pestai</i> (Graf, 1931)	10: Df
<i>Ankylocythere cubensis</i> (Rioja, 1955)	65: Be
<i>Ankylocythere hamata</i> (Hobbs, 1957)	65: Be
<i>Ankylocythere sinuosa</i> (Rioja, 1942)	86: Ct
<i>Australocypris insularis</i> (Chapman, 1966)	109: Ba
<i>Austrocypridopsis terrilli</i> McKenzie, 1982	104: Bs
<i>Batucyprretta</i> sp.	127: Dz
<i>Bradleycypris obliqua</i> (Brady, 1868)	80: Cv
<i>Bradleycypris vittata</i> (Sars, 1903)	142: Dw
<i>Bradleystrandesia weberi</i> (Moniez, 1892)	51: Cu
<i>Bradleytriebella trispinosa</i> (Pinto and Purper, 1965)	2: Ds; 54: By
<i>Bradleytriebella tuberculata</i> (Hartmann, 1964)	142: Dw
<i>Callistocypris zlotini</i> Schornikov, 1980	112: Bm
<i>Candona aotearoa</i> Chapman, 1963	107: Az
<i>Candona candida</i> (O.F. Müller, 1776)	152: Dh; 153: Cw, Cy, Dc and Dh
<i>Candona inexpecta</i> Chapman, 1963	107: Az
<i>Candona lapponica arctica</i> Alm, 1914	152: Dh; 153: Cw, Cy, Dc and Dh
<i>Candona quasiakaina</i> Karanovic and Lee, 2012	142: Dw

Appendix K (Continued)

Taxa	Island/s Code and References
<i>Candona quasiincavum</i> (Karanovic and Datry, 2009)	5: Do
<i>Candona sibirica</i> G.W. Müller, 1912	153: Dc and Dh
<i>Candona</i> sp.	10: Df
<i>Candoninae</i> sp.	79: Cs; 135, 136*, 137 and 139: Cg
<i>Candonocypris incosta</i> De Deckker, 1981	108: Bn
<i>Candonocypris novaezelandiae</i> (Baird, 1843)	107: Az; 111: Dy
<i>Candonopsis anisitsi</i> Daday, 1905	51: Ar
<i>Candonopsis (Candonopsis) hummelincki</i> Broodbakker, 1983	16, 17, 22, and 67: Bt
<i>Candonopsis (Candonopsis) putealis</i> Klie, 1932	120: Bt
<i>Candonopsis calva</i> (Harding 1962)	112: Av; 117: Cb
<i>Candonopsis kingsleii</i> (Brady and Robertson, 1870)	52: Ap
<i>Candonopsis</i> sp.	51: Cu; 88: Dm
<i>Caribecandona ansa</i> Broodbakker, 1983	67: Bt
<i>Caribecandona auricularia</i> Broodbakker, 1983	67: Bt
<i>Caribecandona trapezoidea</i> Broodbakker, 1983	67: Bt
<i>Cavernocypis coreana elongata</i> (McKenzie, 1972)	142: Dw
<i>Centrocypris margaritifera</i> G.W. Müller, 1898	156: Ad
<i>Chlamydotheca barbadensis</i> Sharpe, 1910	17, 19, 31, 38 and 61: By; 27: Bw; 29, 30 and 35: Eb; 70: Ah
<i>Chlamydotheca deformis cearaensis</i> Kotzian, 1974	51: Cu
<i>Chlamydotheca incisa</i> (Claus, 1892)	2: Ds

Appendix K (Continued)

Taxa	Island/s Code and References
<i>Chlamydotheca mexicana</i> Sharpe, 1903	26: By
<i>Chlamydotheca unispinosa</i> (Baird, 1862)	11: Aa; 41, 43, 46, 47, 55, 57, 65 and 68 : By; 51: Cu; 54: Bw; 67: Bt; 86: Ct
<i>Chrissia aldabrae</i> (G.W. Müller, 1898)	156: Ad
<i>Chrissia ceylonica</i> (Daday, 1898)	122: Ax
<i>Chrissia</i> cf. <i>perarmata</i> (Brady, 1904)	89: Dm
<i>Chrissia formosa</i> (Klie, 1938)	127: Dz; 128: An
<i>Chrissia vittata</i> Okubo, 1974	135 and 136: Cg
<i>Cyclocypris anacola</i> Smith et al., 2015	142: Dw
<i>Cyclocypris globosa</i> (Sars, 1863)	153: Cw
<i>Cyclocypris laevis</i> (O.F. Müller, 1776)	79: Cv; 81: Du; 152: Dc and Dh; 153: Dh
<i>Cyclocypris ovum</i> (Jurine, 1820)	51: Cu; 152: Dc and Dh; 153: Dh
<i>Cyclocypris serena</i> (Koch, 1838)	152 and 153: Dh
<i>Cyclocypris</i> sp.	65: Bw; 153: Cw and Dh
<i>Cypretta brevisaepta</i> Furtos, 1934	51: Cu
<i>Cypretta</i> cf. <i>seurati</i> Gauthier, 1929	136, 137 and 139: Cg
<i>Cypretta costata</i> G.W. Müller, 1898	156: Ad
<i>Cypretta globosa</i> (Brady, 1886)	122: Ab
<i>Cypretta globula</i> (Sars, 1889)	90, 92 and 112: Cb
<i>Cypretta infesta</i> Klie, 1941	68: Bh
<i>Cypretta karanovicae</i> Smith et al., 2015	142: Dw

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Taxa	Island/s Code and References
<i>Cypretta murati</i> Gauthier, 1939	161: Dt
<i>Cypretta nukuhivana</i> Furtos, 1934	87: Dr; 93: Al
<i>Cypretta papuana</i> Vávra, 1901	117: Cb
<i>Cypretta raciborskii</i> (Grochmalicki, 1915)	120: Ai
<i>Cypretta sarsi</i> Brady, 1902	15: Ae; 68: Bh
<i>Cypretta seurati</i> Gauthier, 1929	1: Cr; 78: Du; 79: Cp; 88 and 89: Dm; 130, 131, 134 and 135: Ck; 142: Dw; 144 and 150: Ch
<i>Cypretta</i> sp.	14, 15, 17, 19, 25, 27, 32, 34, 35, 36, 37, 38, 41, 42, 43, 44, 45, 46, 48, 49, 50, 52, 53, 57, 60, 69, 70 and 73: By; 16, 22, 67: Bt; 18 and 23: Bw; 51 and 65: Bu; 56: Bz; 103: Bb; 137 and 139: Cg
<i>Cypretta turgida</i> (Sars, 1896)	85: Dx; 92: Cb; 107: Az; 127: Dz
<i>Cypretta viridis</i> (Thomson, 1879)	107: Az
<i>Cypria</i> cf. <i>exsculpta</i> (Fischer, 1855)	71: As
<i>Cypria</i> cf. <i>ophtalmica</i> (Jurine, 1820)	71*: As
<i>Cypria javana</i> G.W. Müller, 1906	120: Ai
<i>Cypria konishii</i> Smith and Kamiya, 2006	141: Dl
<i>Cypria lenticularis</i> G.W. Müller, 1898	156: Ad
<i>Cypria ophtalmica</i> (Jurine, 1820)	79: Du; 83: Cs
<i>Cypria</i> sp.	76: Cs; 78: Du; 79 and 80: Cp; 81: Cv; 135 and 139: Cg; 152 and 153: Dh
<i>Cypricercus sanguineus</i> Chapman, 1963	107: Az
<i>Cyprideis americana</i> (Sharpe, 1909)	73: Dv
<i>Cyprideis consobrina</i> (Brady, 1890)	111: Ac
<i>Cyprideis salebrosa</i> Van Den Bold, 1963	66 and 72: Dn; 71: Eb

Appendix K (Continued)

Taxa	Island/s Code and References
<i>Cyprideis stenopora</i> Triebel, 1956	7: Cq
<i>Cyprideis torosa</i> (Jones, 1850)	78: Du; 81: Cv; 154: Dg; 161: Dt
<i>Cyprididae</i> sp.	89: Dm
<i>Cypridopsine</i> sp.	51: Cu
<i>Cypridopsis</i> cf. <i>vidua</i> (O. F. Müller, 1776)	71*: As; 135, 136, 137 and 139: Cg
<i>Cypridopsis cypera</i> Tressler, 1937	86: Ct
<i>Cypridopsis dentatomarginata</i> (Daday, 1902)	86: Ct
<i>Cypridopsis japonica</i> Okubo, 1990	135: Ck
<i>Cypridopsis jolleae</i> Chapman, 1963	107: Az
<i>Cypridopsis lusatica</i> Schäfer, 1943	75 and 76: Cs; 79 and 80: Cv; 83: Du
<i>Cypridopsis nigrovittata</i> Okubo, 1990	129: Ck
<i>Cypridopsis oceanus</i> Allison and Holden, 1971	9: Cq
<i>Cypridopsis sarasini</i> Méhes, 1939	97: Ao
<i>Cypridopsis</i> sp.	13, 23, 52 and 70: Bw; 14, 15, 17, 24, 27, 35, 37, 38, 41, 42, 43, 45, 46, 48, 49, 51, 53, 57, 60, 63, 65, 67, 69, 71 and 73: By; 18: Bt; 56: Bz, 58: Bu; 125: Dt, 129: Ck; 152 and 153: Dh
<i>Cypridopsis vidua</i> (O. F. Müller, 1776)	2: Ds; 51: Cu; 68: Bh; 76: Cs; 78: Du; 79, 81, 82 and 83: Cp; 86: Ct; 88 and 89: Dm; 107: Bc; 127: Dz; 142: Dw
<i>Cyprinotus</i> cf. <i>kimberleyensis</i> McKenzie, 1966	127: Dz
<i>Cyprinotus cingalensis</i> Brady, 1886	11 and 94: Db; 86: Ct; 95: Bk; 122: Ax; 161: Dt
<i>Cyprinotus drubea</i> Martens et al., 2019	111: Dy
<i>Cyprinotus flavescens</i> Brady, 1898	107: Az

Appendix K (Continued)

Taxa	Island/s Code and References
<i>Cyprinotus kimberleyensis</i> McKenzie, 1966	135: Cg
<i>Cypris bispinosa</i> Lucas, 1849	78: Cv
<i>Cypris decaryi</i> Gauthier, 1933	23, 25 and 52: Bw; 24, 35, 48 and 67: By; 51: Cu; 58: Au; 156: Eb
<i>Cypris granulata</i> Daday, 1898	23, 25, 52, 54, 55 and 70: Bw; 51: Cu; 67: By; 111: Dy; 122: Ax; 135*, 136 and 139: Cg
<i>Cypris latissima</i> (G.W. Müller, 1898)	156: Ad
<i>Cypris pubera</i> O.F. Müller, 1776	78 and 80: Cv
<i>Cypris</i> sp.	65: Bw
<i>Cypris vitiensis</i> Dana, 1852	98: Cb
<i>Cyprois marginata</i> (Straus, 1821)	153: Dh
<i>Cytheridella boldi</i> Purper, 1974	66: Cq
<i>Cytheridella ilosvayi</i> Daday, 1905	51 and 71: Cu; 65: Cq
<i>Cytheroidea</i> sp.	89: Dm
<i>Darwinula</i> cf. <i>stevensoni</i> (Brady and Robertson 1870)	25, 27 and 67: By
<i>Darwinula repoa</i> Chapman, 1963	107: Az
<i>Darwinula</i> sp.	45 and 62: By; 71*: As; 135: Cg
<i>Darwinula stevensoni</i> (Brady and Robertson 1870)	20: Bt; 23: Bw; 25 and 26: Ak; 68: Bh; 71*: As; 120: Aj; 127: Dz
<i>Diaphanocypris meridana</i> (Furtos, 1936)	30, 35, 37, 52 and 56: Bz; 51: Cu
<i>Dolerocypris convulata</i> Maddocks, 1993	51: Dd
<i>Dolerocypris ensigera</i> Maddocks, 1992	8: Cl
<i>Dolerocypris heylenae</i> Wouters, 2001	115: Dd
<i>Dolerocypris iliffei</i> Maddocks, 2005	95: Dj

Appendix K (Continued)

Taxa	Island/s Code and References
<i>Dolerocypria mukaishimensis</i> Okubo, 1980	142: Dw
<i>Dolerocypria taalensis</i> Tressler, 1937	112: Am; 114: Dd; 125: Bl
<i>Dolerocypris fasciata</i> (O.F. Müller, 1776)	135 and 136: Cg; 142: Ci
<i>Dolerocypris ikeyai</i> Smith and Kamiya, 2006	141: Dl; 142: Dw
<i>Dolerocypris sinensis</i> Sars, 1903	135, 137 and 139: Cg; 142: Dw
<i>Elpidium laesslei</i> (Tressler, 1956)	51: Ar
<i>Elpidium maricaoensis</i> (Tressler, 1941)	52: Ap
<i>Entocythere ruibali</i> Rioja, 1955	65: Be
<i>Eucypris</i> cf. <i>lilljeborgi</i> (G.W. Müller, 1900)	71: As
<i>Eucypris fabaeformis</i> Daday, 1900	113: Cb
<i>Eucypris halyi</i> (Brady, 1886)	122: Ab
<i>Eucypris opulenta</i> Margalef, 1961	35: Eb
<i>Eucypris pigra</i> (Fischer, 1851)	142: Dw; 153: Cw, Dc and Dh
<i>Eucypris pratensis</i> Eagar, 1970	107: Bd
<i>Eucypris</i> sp.	62 and 65: By
<i>Eucypris thomsoni</i> Chapman, 1963	107: Az
<i>Eucypris virens</i> (Jurine, 1820)	103 and 158: Df; 107: Bc
<i>Eucypris wolfhügeli</i> (Méhes, 1914)	97: Ao
<i>Fabaeformiscandona acuminata</i> (Fischer, 1851)	152: Dh; 153: Dc and Dh
<i>Fabaeformiscandona groenlandica</i> (Brehm, 1911)	99: Bi; 152: Dh; 153: Cw, Cy, Dc and Dh

Appendix K (Continued)

Taxa	Island/s Code and References
<i>Fabaeformiscandona harmsworthi</i> (Scott, 1899)	152: Dc and Dh; 153: Cw, Cy and Dh
<i>Fabaeformiscandona pedata</i> (Alm, 1914)	152: Dh; 153: Cw, Cy and Dh
<i>Fabaeformiscandona subacuta</i> (Yang in Hou et al., 1982)	107 and 135: Dq; 127: Dz; 142: Dw
<i>Gomphocythere duffi</i> (Hornibrook, 1955)	107: Bc
<i>Hansacypris galapagosensis</i> Maddocks, 1992	8: Cl
<i>Hansacypris glabra</i> Wouters, 1984	116: Dd
<i>Hansacypris motuporensis</i> Wouters, 2001	115: Dd
<i>Hansacypris natans</i> (Hartmann, 1984)	91: Ca
<i>Hemicypris anomala</i> (Klie, 1938)	127: Dz; 128: An
<i>Hemicypris aurita</i> (Klie, 1939)	161: Dt
<i>Hemicypris barbadensis</i> Broodbakker, 1983	27: By; 70: Bw
<i>Hemicypris exigua</i> Broodbakker, 1983	18, 23, 25, 27, 33, 35, 52, 54, 58, 65 and 70: Bw; 55: By
<i>Hemicypris intermedia</i> (Lindroth, 1953)	161: Di
<i>Hemicypris reticulata</i> (Klie, 1930)	13, 19, 23, 25, 27 and 52: Bw; 18: By
<i>Hemicypris</i> sp.	135 and 139: Cg
<i>Herpetocypris</i> cf. <i>helenae</i> G.W. Müller, 1908	79 and 81: Cn
<i>Herpetocypris helenae</i> G.W. Müller, 1908	80: Cs
<i>Herpetocypris pascheri</i> Brehm, 1929	107: Az
<i>Herpetocypris testudinaria</i> Cushman, 1908	74: Ag
<i>Heterocypris antillensis</i> Broodbakker, 1982	16, 17, 18, 23, 25, 27, 59, 60 and 61: Bq; 24, 26 and 52: Bv; 38: Bq

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Taxa	Island/s Code and References
<i>Heterocypris</i> cf. <i>incongruens</i> (Ramdohr, 1808)	100: Cb
<i>Heterocypris giesbrechti</i> (G.W. Müller, 1898)	157: Ad
<i>Heterocypris incongruens</i> (Ramdohr, 1808)	1: Cr; 35: At; 78 and 83: Du; 79, 80 and 81: Cv; 132: Ck; 135: Cg; 142, 145, 147, 148 and 149: Ci
<i>Heterocypris makua</i> (Tressler, 1937)	86: Ct
<i>Heterocypris margaritae</i> Margalef, 1961	17, 23, 26, 27, 28, 29, 31, 36 and 70: Bq; 30: Bz; 34 and 35: Bv
<i>Heterocypris punctata</i> Keyser, 1975	12: Bg; 17, 29, 44, 61, 62 and 64: Bq; 18: Bt
<i>Heterocypris salina</i> (Brady, 1868)	76: Cs; 78: Du; 79 and 81: Cv; 80: Cp; 142: Dw
<i>Heterocypris similis</i> (Wierzejski, 1893)	25, 26 and 27: Ak
<i>Heterocypris symmetrica</i> (G.W. Müller, 1898)	157: Ad
<i>Hungarocypris asymmetrica</i> Victor and Fernando, 1981	123: Bo
<i>Ilyocypris angulata</i> Sars, 1903	139: Cg
<i>Ilyocypris bradyi</i> Sars, 1890	71*: As; 78: Cv; 79 and 81: Du
<i>Ilyocypris dentifera</i> Sars, 1903	135 and 138: Cg; 142, 146, 147 and 150: Ch
<i>Ilyocypris fallax</i> Brehm, 1928	107: Az
<i>Ilyocypris gibba</i> (Ramdohr, 1808)	81: Cv
<i>Ilyocypris japonica</i> Okubo, 1990	132: Ck
<i>Ilyocypris</i> sp.	65: By; 137: Cg
<i>Ilyodromus kerguelensis</i> G.W. Müller, 1906	158, 159 and 160: Df
<i>Ilyodromus lanaoensis</i> Victor and Fernando, 1981	126: Bp
<i>Ilyodromus obtusus</i> Sars, 1894	107: Az

Appendix K (Continued)

Taxa	Island/s Code and References
<i>Ilyodromus substriatus</i> Sars, 1894	107: Az
<i>Ilyodromus varrovillius</i> (King, 1855)	107: Az
<i>Indiacypris luxata</i> (Brady 1886)	122: Ab
<i>Ishizakiella miurensis</i> (Hanai, 1957)	142: Dw
<i>Ishizakiella supralittoralis</i> (Schornikov, 1974)	142: Dw; 151: Bf
<i>Kennethia major</i> (Méhes, 1939)	95: Bj; 111: Dy
<i>Kiwicythere anneari</i> Martens, 1992	105: Cm
<i>Latinopsis patagonica</i> Karanovic and Datry, 2009	5: Do
<i>Leucocythere mirabilis</i> Kaufmann, 1892	153: Ea
<i>Leucocythere</i> sp.	153: Cw
<i>Limnocythere conifera</i> Brehm, 1950	108: Aq
<i>Limnocythere inopinata</i> (Baird, 1843)	81: Cv; 152 and 153: Dh
<i>Limnocythere notodonta</i> Vávra, 1906	94: Db; 120: Af
<i>Limnocythere percivali</i> Brehm, 1939	107*: Aq
<i>Limnocythere</i> sp.	71*: As; 142: Dw
<i>Limnocythere stationis</i> Vávra, 1891	161: Dt
<i>Limnocythere viaticum</i> Allison and Holden, 1971	9: Cq
<i>Limnocytherina sanctipatricii</i> (Brady and Robertson, 1869)	51: Cu; 152: Dc and Dh; 153: Dc and Dh
<i>Madagascarcypris voeltzkowi</i> (G.W. Müller, 1898)	156: Ad
<i>Mangalocypris africana</i> (Hartmann, 1974)	115, 124 and 155: Cz; 119: Dm

Appendix K (Continued)

Taxa	Island/s Code and References
<i>Mangalocypria appendix</i> Wouters, 1998	114: Cz
<i>Mangalocypria eleotridis</i> (Harding, 1962)	101: Cz
<i>Microdarwinula zimmeri</i> (Menzel, 1916)	127: Dz
<i>Mungava intermedia</i> Wouters, 1987	114 and 116: Cf
<i>Mungava munda</i> Harding, 1962	8: Cl; 101 and 114: Cf; 155: Cz
<i>Mungava papuensis</i> Wouters, 1987	116: Cf
<i>Mungava recta</i> Maddocks, 1992	7: Cq
<i>Mungava woutersi</i> Maddocks, 2005	97: Dj
<i>Mungava xariessa</i> Maddocks, 2005	96: Dj
<i>Mytilocypris henricae</i> (Chapman, 1966)	110: Ba
<i>Nealeocypris clavigera</i> (G.W. Müller, 1898)	156: Ad
<i>Neocypridopsis debilis</i> Klie, 1940	17: Bu; 61: By
<i>Neocypridopsis frigogena</i> (Graf, 1931)	3: Bs; 6: Df
<i>Neocypridopsis inaudita</i> (Furtos, 1936)	21, 24, 25, 34, 38, 41, 45, 46, 48, 49, 52, 62 and 67: By; 44 and 59: Bz; 65: Bu
<i>Neocypridopsis mexicana</i> (Furtos, 1938)	65: By
<i>Neocypridopsis</i> sp.	21: By
<i>Newnhamia fenestrata</i> King, 1855	107 and 117: Az
<i>Newnhamia patagonica</i> (Vávra, 1898)	4: Df
<i>Notodromas persica</i> Gurney, 1921	122: Ax
<i>Oncocypris voeltzkowi</i> G.W. Müller, 1898:	156: Ad

Appendix K (Continued)

Taxa	Island/s Code and References
<i>Paracypria adnata</i> Smith and Kamiya, 2006	141: Dl
<i>Paracypria inopinata</i> (Klie, 1939)	73: Dv
<i>Paracypria uberis</i> Maddocks, 2005	96 and 97: Dj
<i>Penthesilenula aotearoa</i> (Rossetti et al., 1998)	107: Cx
<i>Penthesilenula brasiliensis</i> (Pinto and Kotzian, 1961)	111: De
<i>Penthesilenula kohanga</i> (Rossetti et al., 1998)	107: Cx
<i>Penthesilenula malayica</i> (Menzel, 1923)	120: Cx
<i>Penthesilenula sphagna</i> (Barclay, 1968)	107: Bc
<i>Perissocytheridea bicelliforma</i> Swain, 1955	73: Dv
<i>Perissocytheridea cribrosa</i> (Klie, 1933)	17, 23, 27 and 62: By
<i>Perissocytheridea matsoni</i> (Stephenson, 1935)	71*: As
<i>Perissocytheridea</i> sp.	54: Bu
<i>Physocypria affinis</i> Klie, 1933	17: Bu; 18, 23, 29, 31, 32, 38, 61 and 69: By; 19: Bt; 25: Ak; 30: Bz; 35 and 54: Bw
<i>Physocypria capensis</i> (Sars, 1895)	156: Ad; 161: Dt
<i>Physocypria deformis</i> Klie, 1940	51: Cu
<i>Physocypria denticulata</i> (Daday, 1905)	73: Dv
<i>Physocypria furfuracea</i> (Brady, 1886)	122: Ab
<i>Physocypria kraepelini</i> G.W. Müller, 1903	127: Dz
<i>Physocypria nipponica</i> Okubo, 1990	132: Ck; 142: Dw
<i>Physocypria</i> sp.	13, 41, 43, 44, 45, 46, 48, 49, 50 and 73: By; 65: Bu; 67: Bt; 161: Di

Appendix K (Continued)

Taxa	Island/s Code and References
<i>Physocypria sanctaeannae</i> Margalef, 1961	35: Eb
<i>Plesiocypridopsis newtoni</i> (Brady and Robertson, 1870)	77, 80, 81, 83 and 84: Cp; 157: Ad
<i>Plesiocypridopsis</i> sp.	161: Dt
<i>Pontoparta hartmanni</i> Keyser, 1975	12: Bg; 51: Co
<i>Pontoparta rara</i> Vávra, 1901	114: Cb; 117: Bl; 118: Dj
<i>Potamocypris arcuata</i> (Sars, 1903)	76: Cs; 81: Cv; 83: Du
<i>Potamocypris hummelincki</i> Klie, 1933	17, 18, 19, 24, 29, 31, 35, 36, 38, 61, 63, 64 and 70: By; 23and 25: Bw; 27: Bq
<i>Potamocypris insularis</i> Allison and Holden, 1971	9: Cq
<i>Potamocypris mastigophora</i> (Meuthuen, 1910)	79 and 83: Du
<i>Potamocypris ombrophila</i> Margalef, 1961	35: Eb
<i>Potamocypris pallida</i> Alm, 1914	75: Cj; 79: Du
<i>Potamocypris</i> sp.	19: Bw; 70: Bt
<i>Potamocypris sudzukii</i> Okubo, 1992	133 and 135: Ck
<i>Potamocypris variegata</i> (Brady and Norman, 1889)	142: Dw
<i>Potamocypris villosa</i> (Jurine, 1820)	79: Cv; 80: Du
<i>Prionocypris marplei</i> Chapman, 1963	107: Az
<i>Pseudocandona albicans</i> (Brady, 1864)	79 and 80: Cp; 83: Du
<i>Pseudocandona antilliana</i> Broodbakker, 1983	18, 19, 20, 21*, 22, 23, 67 and 70: Bt; 37: By; 51 and 65: Bu
<i>Pseudocandona caribbeana</i> Broodbakker, 1983	51: Bt
<i>Pseudocandona cubensis</i> Broodbakker, 1983	65: Bt

Appendix K (Continued)

Taxa	Island/s Code and References
<i>Pseudocyprretta lineata</i> (Ma and Yu, 2020)	127: Dz
<i>Pseudostrandesia calapanensis</i> (Tressler 1937)	127: Dz; 128: Br
<i>Pseudostrandesia mamarilorum</i> (Victor and Fernando, 1981)	127:Dz
<i>Renaudcypris gorongae</i> McKenzie, 1980	112: Cd; 121: Bl
<i>Renaudcypris luzonensis</i> Wouters, 1986	125: Ce
<i>Renaudcypris wolffi</i> (Harding, 1962)	101: Bl; 114: Cd
<i>Rudjakoviella prolongata</i> (Triebel, 1962)	30: By; 35: Eb
<i>Sarscypridopsis aculeata</i> (Costa, 1847)	81: Cp; 83: Du
<i>Sarscypridopsis lanzarotensis</i> (Mallwitz, 1984)	77: Cc; 78: Du; 79, 80, 82 and 83: Cp; 81: Cv
<i>Schellencandona yakushimaensis</i> Smith and Kamiya, 2006	141: Dl
<i>Sclerocypris</i> sp.	161: Di
<i>Scottia insularis</i> Chapman, 1963	106 and 107: Az
<i>Scottia pseudobrowniana</i> Kempf, 1971	142: Dw
<i>Stenocypris derupta</i> Vávra 1906	120: Af; 127: Dz
<i>Stenocypris hirutai</i> Smith and Kamiya, 2006	127: Dz; 141: Dl; 142 and 143: Dw
<i>Stenocypris hislopi</i> Ferguson, 1969	122 and 150: Ch; 130: Ck
<i>Stenocypris major</i> (Baird, 1859)	13, 18, 19, 23, 25, 27, 52, 54 and 55: Bw; 17 and 65: Bu; 35, 37, 48 and 53: By; 51: Cu; 67 and 70: Bt; 68: Bh; 71*: As; 88 and 89: Dm; 111: Dy; 122: Ax; 127: Dz; 135, 136, 137 and 139: Cg
<i>Stenocypris major major</i> (Baird, 1859)	25: Ak; 51: Aa; 122: Ax
<i>Stenocypris malayica</i> Victor and Fernando, 1981	88 and 89: Dm; 127: Dz
<i>Stenocypris marginata</i> Daday, 1910	111: Ao

Appendix K (Continued)

Taxa	Island/s Code and References
<i>Stenocypris orientalis</i> Victor and Fernando, 1981	127: Dz
<i>Stenocypris</i> sp.	68: Bh; 161: Di
<i>Stenocypris tsukagoshii</i> Smith and Kamiya, 2006	141: Dl
<i>Strandesia bicuspis</i> (Claus, 1892)	2: Ds
<i>Strandesia botosaneanui</i> Broodbakker, 1983	65: Bu
<i>Strandesia cavernicola</i> Broodbakker, 1983	65 and 67: Bu
<i>Strandesia flavescens</i> Klie, 1932	128: Dp; 142: Dw
<i>Strandesia freyi</i> Victor and Fernando, 1981	127: Dz
<i>Strandesia longula</i> Broodbakker, 1983	17, 23, 25, 37, 38, 39, 40, 41, 43, 45, 46, 48, 65, 67 and 73: Bu; 21: By;
<i>Strandesia marmorata</i> (Brady 1886)	122: Ab
<i>Strandesia pistrix</i> Broodbakker, 1983	51: Cu; 67: Bu
<i>Strandesia purpurascens</i> (Brady, 1886)	120: Af
<i>Strandesia reticulata</i> (Daday, 1898)	122: Ax
<i>Strandesia rouxi</i> Méhes, 1939	111: Ao
<i>Strandesia sphaeroidea</i> Broodbakker, 1983	19: Bt; 54: Bu
<i>Strandesia stocki</i> Broodbakker, 1983	14 and 65: By; 17, 18, 51, 58 and 64: Bu; 67: Bt
<i>Strandesia tenuicauda</i> (Brady, 1886)	122: Ab
<i>Strandesia vavrai vavrai</i> (G.W. Müller, 1898)	156: Ad
<i>Strandesia vinciguerrae</i> (Masi, 1905)	79: Du; 88 and 89: Dm
<i>Strandesia wierzejskii</i> (Grochmalicki, 1915)	120: Ai

Appendix K (Continued)

Taxa	Island/s Code and References
<i>Tanycypris alfonsi</i> Nagler et al., 2014	142: Dw
<i>Tanycypris centa</i> Chang et al., 2012	142: Dw
<i>Tanycypris madagascarensis</i> (G.W. Müller, 1898)	156: Ad
<i>Tanycypris pellucida</i> (Klie, 1932)	134* and 135*: Ck
<i>Terrestricypris arborea</i> Schornikov, 1980	112: Bm
<i>Terrestricythere ivanovae</i> Schornikov, 1969	142: Dw
<i>Thalassocypria sarbui</i> Maddocks, 1993	51: Co
<i>Tonnacypris glacialis</i> (Sars, 1890)	152 and 153: Ea
<i>Trajancypris clavata</i> (Baird, 1838)	80: Cv
<i>Tungucypridopsis lairdi</i> (Victor and Fernando, 1978)	102: Bx
<i>Vestalenula cornelia</i> Smith et al., 2006	127: Dz; 138, 140 and 141: Dk
<i>Vestalenula cylindrica</i> (Straub, 1952)	142: Dw
<i>Vestalenula daps</i> (Harding, 1962)	101: Cx; 112: Aw
<i>Vestalenula lundi</i> (Neale and Victor, 1978)	122: Cx
<i>Vestalenula marmonieri</i> Rossetti and Martens, 1999	111: Da
<i>Vestalenula molopoensis</i> (Martens and Rossetti, 1997)	161: Dt
<i>Vestalenula</i> sp.	127: Dz; 161: Di
<i>Xestoleberis arcturi</i> Triebel, 1956	7: Cq
<i>Xestoleberis curassavica</i> Klie, 1939	73: Dv
<i>Zonocypris costata</i> (Vávra, 1897)	156: Ad
<i>Zonocypris elegans</i> G.W. Müller, 1898	156: Ad

Appendix L List of ostracods determined from living individuals (valves, carapace, cf. and sp. diagnostics not included) and the 156 non-Mediterranean islands where Ostracoda were recorded (in order to access the data more easily and avoid confusion, Dominican, Haitian, New Guinea and Papua New Guinea islands were coded as different islands in the list, and as a result, the data of 160 islands are given below.). The reference list is the same as for Appendix K.



Appendix L (Continued)

Species	Island/s
<i>Argentocypris fontana</i> (Graf, 1931)	South Orkney Islands and South Georgia
<i>Amphicypris pestai</i> (Graf, 1931)	South Georgia
<i>Ankylocythere cubensis</i> (Rioja, 1955)	Cuba
<i>Ankylocythere hamata</i> (Hobbs, 1957)	Cuba
<i>Ankylocythere sinuosa</i> (Rioja, 1942)	Hawaii
<i>Australocypris insularis</i> (Chapman, 1966)	West Wallabi
<i>Austrocypridopsis terrilli</i> McKenzie, 1982	Campbell
<i>Bradleycypris obliqua</i> (Brady, 1868)	Tenerife
<i>Bradleycypris vittata</i> (Sars, 1903)	Jeju
<i>Bradleystrandesia weberi</i> (Moniez, 1892)	Jamaica
<i>Bradleytriebella trispinosa</i> (Pinto and Purper, 1965)	Martin Garcia (Rio de la Plata) and Marie Galante
<i>Bradleytriebella tuberculata</i> (Hartmann, 1964)	Jeju
<i>Callistocypris zlotini</i> Schornikov, 1980	Solomon Islands
<i>Candona aotearoa</i> Chapman, 1963	New Zealand
<i>Candona candida</i> (O.F. Müller, 1776)	Vaigach and Novaya Zemlya Archipelago
<i>Candona inexpecta</i> Chapman, 1963	New Zealand
<i>Candona lapponica arctica</i> Alm, 1914	Vaigach and Novaya Zemlya Archipelago
<i>Candona quasiakaina</i> Karanovic and Lee, 2012	Jeju
<i>Candona quasiincavum</i> (Karanovic and Datry, 2009)	Madre de Dios Archipelago
<i>Candona sibirica</i> G.W. Müller, 1912	Novaya Zemlya Archipelago

Appendix L (Continued)

Species	Island/s
<i>Candonocypris incosta</i> De Deckker, 1981	Tasmania
<i>Candonocypris novaezelandiae</i> (Baird, 1843)	New Zealand and New Caledonia
<i>Candonopsis anisitsi</i> Daday, 1905	Jamaica
<i>Candonopsis (Candonopsis) hummelincki</i> Broodbakker, 1983	Virgin Gorga (British Virgin Islands), St. Martin, Vieques and Haiti
<i>Candonopsis (Candonopsis) putealis</i> Klie, 1932	Java
<i>Candonopsis calva</i> (Harding 1962)	Solomon Islands and Bismarck Archipelago
<i>Candonopsis kingsleii</i> (Brady and Robertson, 1870)	Puerto Rico
<i>Caribecandona ansa</i> Broodbakker, 1983	Haiti
<i>Caribecandona auricularia</i> Broodbakker, 1983	Haiti
<i>Caribecandona trapezoidea</i> Broodbakker, 1983	Haiti
<i>Cavernocypis coreana elongata</i> (McKenzie, 1972)	Jeju
<i>Centrocypris margaritifera</i> G.W. Müller, 1898	Madagascar
<i>Chlamydotheca barbadensis</i> Sharpe, 1910	St. Martin, Antigua, Aruba, Iguana (Los Testigos), Los Testigos, St. Eustatius, Barbuda, Margarita, La Blanquilla and Barbados
<i>Chlamydotheca deformis cearaensis</i> Kotzian, 1974	Jamaica
<i>Chlamydotheca incisa</i> (Claus, 1892)	Martin Garcia (Rio de la Plata)
<i>Chlamydotheca mexicana</i> Sharpe, 1903	Klein Bonaire

Appendix L (Continued)

Species	Island/s
<i>Chlamydotheca unispinosa</i> (Baird, 1862)	Grand Cayman, Providenciales, Crooked, Bahamas, Jamaica, Marie Galante, Guadeloupe, Santies Islands, Cuba, Haiti, St. Vincen, Sandwich Islands and Hawaii
<i>Chrissia aldabrae</i> (G.W. Müller, 1898)	Madagascar
<i>Chrissia ceylonica</i> (Daday, 1898)	Sri Lanka
<i>Chrissia formosa</i> (Klie, 1938)	Hainan and Taiwan
<i>Chrissia vittata</i> Okubo, 1974	Okinawa and Yoron
<i>Cyclocypris anacola</i> Smith et al., 2015	Jeju
<i>Cyclocypris globosa</i> (Sars, 1863)	Novaya Zemlya Archipelago
<i>Cyclocypris laevis</i> (O.F. Müller, 1776)	La Gomera (Canary Islands), Fuerteventura (Canary Islands), Vaigach and Novaya Zemlya Archipelago
<i>Cyclocypris ovum</i> (Jurine, 1820)	Jamaica, Vaigach and Novaya Zemlya Archipelago
<i>Cyclocypris serena</i> (Koch, 1838)	Vaigach and Novaya Zemlya Archipelago
<i>Cypretta brevisaepta</i> Furtos, 1934	Jamaica
<i>Cypretta costata</i> G.W. Müller, 1898	Madagascar
<i>Cypretta globosa</i> (Brady, 1886)	Sri Lanka
<i>Cypretta globula</i> (Sars, 1889)	Cook, Samoa (Tonga) and Solomon Islands
<i>Cypretta infesta</i> Klie, 1941	St. Vincen
<i>Cypretta karanovicae</i> Smith et al., 2015	Jeju
<i>Cypretta murati</i> Gauthier, 1939	Socotra
<i>Cypretta nukuhivana</i> Furtos, 1934	Nuku Hiva and Marquesas Islands
<i>Cypretta papuana</i> Vávra, 1901	Bismarck Archipelago
<i>Cypretta raciborskii</i> (Grochmalicki, 1915)	Java
<i>Cypretta sarsi</i> Brady, 1902	St. Thomas (US Virgin Islands) and St. Vincen

Appendix L (Continued)

Species	Island/s
<i>Cypretta seurati</i> Gauthier, 1929	Easter, Gran Canaria (Canary Islands), La Gomera (Canary Islands), Futuna, Wallis, Kuroshima, Yonaguni, Sesoko, Ulleung, Sohuksan, Okinawa and Jeju
<i>Cypretta turgida</i> (Sars, 1896)	Oceanic Islands, Samoa (Tonga), New Zealand and Hainan
<i>Cypretta viridis</i> (Thomson, 1879)	New Zealand
<i>Cypria javana</i> G.W. Müller, 1906	Java
<i>Cypria konishii</i> Smith and Kamiya, 2006	Yakushima
<i>Cypria lenticularis</i> G.W. Müller, 1898	Madagascar
<i>Cypria ophtalmica</i> (Jurine, 1820)	La Gomera (Canary Islands) and El Hierro (Canary Islands)
<i>Cypricercus sanguineus</i> Chapman, 1963	New Zealand
<i>Cyprideis americana</i> (Sharpe, 1909)	San Salvador
<i>Cyprideis consobrina</i> (Brady, 1890)	New Caledonia
<i>Cyprideis salebrosa</i> Van Den Bold, 1963	Trinidad, Tobago and Dominican Republic
<i>Cyprideis stenopora</i> Triebel, 1956	Galapagos Islands
<i>Cyprideis torosa</i> (Jones, 1850)	Gran Canaria (Canary Islands), Fuerteventura (Canary Islands), Silhouette (Seychelles) and Socotra
<i>Cypridopsis cypera</i> Tressler, 1937	Hawaii
<i>Cypridopsis dentatmarginata</i> (Daday, 1902)	Hawaii
<i>Cypridopsis japonica</i> Okubo, 1990	Okinawa
<i>Cypridopsis jolleae</i> Chapman, 1963	New Zealand

Appendix L (Continued)

Species	Island/s
<i>Cypridopsis lusatica</i> Schäfer, 1943	Madiera Islands, Azores, La Gomera (Canary Islands), Tenerife (Canary Islands) and El Hierro (Canary Islands)
<i>Cypridopsis nigrovittata</i> Okubo, 1990	Kohama
<i>Cypridopsis oceanus</i> Allison and Holden, 1971	Clipperton
<i>Cypridopsis sarasini</i> Méhes, 1939	Ovéa
<i>Cypridopsis vidua</i> (O. F. Müller, 1776)	Martin Garcia (Rio de la Plata), Jamaica, St. Vincen, Azores, Gran Canaria (Canary Islands), La Gomera (Canary Islands), Fuerteventura (Canary Islands), La Palma (Canary Islands), El Hierro (Canary Islands), Hawaii, Futuna, Wallis, New Zealand, Hainan and Jeju
<i>Cyprinotus cingalensis</i> Brady ,1886	Sandwich Islands, Hawaii, Tarawa Atoll, Loyalty Islands, Sri Lanka, Socotra
<i>Cyprinotus drubea</i> Martens et al., 2019	New Caledonia
<i>Cyprinotus flavescens</i> Brady, 1898	New Zealand
<i>Cyprinotus kimberleyensis</i> McKenzie, 1966	Okinawa
<i>Cypris bispinosa</i> Lucas, 1849	Gran Canaria (Canary Islands)
<i>Cypris decaryi</i> Gauthier, 1933	Curacao, Klein Curacao, Bonaire, St. Barthelemy, Margarita, Eleuthera, Jamaica, Puerto Rico, Madagascar and Haiti

Appendix L (Continued)

Species	Island/s
<i>Cypris granulata</i> Daday, 1898	Curacao, Bonaire, Jamaica, Puerto Rico, Marie Galante, Guadeloupe, Haiti, Barbados, New Caledonia, Sri Lanka, Yoron and Okinoerabu-shima
<i>Cypris latissima</i> (G.W. Müller, 1898)	Madagascar
<i>Cypris pubera</i> O.F. Müller, 1776	Gran Canaria (Canary Islands) and Tenerife (Canary Islands)
<i>Cypris vitiensis</i> Dana, 1852	Fiji
<i>Cyprois marginata</i> (Straus, 1821)	Novaya Zemlya Archipelago
<i>Cytheridella boldi</i> Purper, 1974	Dominican Republic
<i>Cytheridella ilosvayi</i> Daday, 1905	Jamaica, Cuba and Trinidad
<i>Darwinula repoa</i> Chapman, 1963	New Zealand
<i>Darwinula stevensoni</i> (Brady and Robertson, 1870)	Dog, Curacao, St. Vincen, Bonaire, Klein Bonaire, Hainan and Java
<i>Diaphanocypris meridana</i> (Furtos, 1936)	Iguana (Los Testigos), Margarita, La Desirade, Puerto Rico, Terre De Haut and Jamaica
<i>Dolerocypris convulata</i> Maddocks, 1993	Jamaica
<i>Dolerocypris ensigera</i> Maddocks, 1992	Santa Cruz (Galapagos Islands)
<i>Dolerocypris heylenae</i> Wouters, 2001	Motupore (Papua New Guinea)
<i>Dolerocypris iliffei</i> Maddocks, 2005	Loyalty Islands
<i>Dolerocypris mukaishimensis</i> Okubo, 1980	Jeju
<i>Dolerocypris taalensis</i> Tressler, 1937	Solomon Islands, Luzon and Papua New Guinea
<i>Dolerocypris fasciata</i> (O.F. Müller, 1776)	Okinawa, Yoron and Jeju

Appendix L (Continued)

Species	Island/s
<i>Dolerocypris ikeyai</i> Smith and Kamiya, 2006	Yakushima Islands and Jeju
<i>Dolerocypris sinensis</i> Sars, 1903	Okinawa, Tokunoshima, Okinoerabu-shima and Jeju
<i>Elpidium laesslei</i> (Tressler, 1956)	Jamaica
<i>Elpidium maricaoensis</i> (Tressler, 1941)	Puerto Rico
<i>Entocythere ruibali</i> Rioja, 1955	Cuba
<i>Eucypris fabaeformis</i> Daday, 1900	New Guinea
<i>Eucypris halyi</i> (Brady, 1886)	Sri Lanka
<i>Eucypris opulenta</i> Margalef, 1961	Margarita
<i>Eucypris pigra</i> (Fischer, 1851)	Jeju and Novaya Zemlya Archipelago
<i>Eucypris pratensis</i> Eagar, 1970	New Zealand
<i>Eucypris thomsoni</i> Chapman, 1963	New Zealand
<i>Eucypris virens</i> (Jurine, 1820)	Macquarie, New Zealand and Kerguelen
<i>Eucypris wolffhügeli</i> (Méhes, 1914)	Ovéa
<i>Fabaeformiscandona acuminata</i> (Fischer, 1851)	Vaigach and Novaya Zemlya Archipelago
<i>Fabaeformiscandona groenlandica</i> (Brehm, 1911)	Futuna (Vanuatu), Vaigach and Novaya Zemlya Archipelago
<i>Fabaeformiscandona harmsworthi</i> (Scott, 1899)	Vaigach and Novaya Zemlya Archipelago
<i>Fabaeformiscandona pedata</i> (Alm, 1914)	Vaigach and Novaya Zemlya Archipelago
<i>Fabaeformiscandona subacuta</i> (Yang in Hou et al., 1982)	New Zealand, Hainan, Okinawa and Jeju

Appendix L (Continued)

Species	Island/s
<i>Gomphocythere duffi</i> (Hornibrook, 1955)	New Zealand
<i>Hansacypris galapagosensis</i> Maddocks, 1992	Santa Cruz (Galapagos Islands)
<i>Hansacypris glabra</i> Wouters, 1984	Laing
<i>Hansacypris motuporensis</i> Wouters, 2001	Motupore
<i>Hansacypris natans</i> (Hartmann, 1984)	Rangiroa
<i>Hemicypris anomala</i> (Klie, 1938)	Hainan and Taiwan
<i>Hemicypris aurita</i> (Klie, 1939)	Socotra
<i>Hemicypris barbadensis</i> Broodbakker, 1983	Aruba and Barbados
<i>Hemicypris exigua</i> Broodbakker, 1983	Martinique, Curacao, Bonaire, Aruba, Cubagua, Margarita, Puerto Rico, Marie Galante, Guadeloupe, Dominica, Cuba and Barbados
<i>Hemicypris intermedia</i> (Lindroth, 1953)	Socotra
<i>Hemicypris reticulata</i> (Klie, 1930)	St. Croix (US Virgin Islands), Martinique, Antigua, Curacao, Bonaire, Aruba and Puerto Rico
<i>Herpetocypris helenae</i> G.W. Müller, 1908	Tenerife (Canary Islands)
<i>Herpetocypris pascheri</i> Brehm, 1929	New Zealand
<i>Herpetocypris testudinaria</i> Cushman, 1908	Funk (Canada)
<i>Heterocypris antillensis</i> Broodbakker, 1982	Virgin Gorga (British Virgin Islands), St. Martin, Martinique, Curacao, Klein Curacao, Bonaire, Klein Bonaire, Aruba, St. Eustatius, Puerto Rico, St. Barthelemy, Saba and Barbuda
<i>Heterocypris giesbrechti</i> (G.W. Müller, 1898)	Aldabra

Appendix L (Continued)

Species	Island/s
<i>Heterocypris incongruens</i> (Ramdohr, 1808)	Gran Canaria (Canary Islands), La Gomera (Canary Islands), Tenerife (Canary Islands), Fuerteventura (Canary Islands), El Hierro (Canary Islands), Hateruma, Wonsan, Yongjong, Togjok, Okinawa, Seonyu, Jeju, Margarita and Easter
<i>Heterocypris makua</i> (Tressler, 1937)	Hawaii
<i>Heterocypris margaritae</i> Margalef, 1961	St. Martin, Curacao, Klein Bonaire, Aruba, Tortugillo, La Blanquilla, Los Testigos, La Tortuga, Margarita, Grenada, Iguana and Barbados
<i>Heterocypris punctata</i> Keyser, 1975	Marco (USA), St. Martin, Martinique, La Blanquilla, South Caicos, Barbuda, Anguilla and St. Kitts
<i>Heterocypris salina</i> (Brady, 1868)	Azores, Gran Canaria (Canary Islands), La Gomera (Canary Islands), Tenerife (Canary Islands), Fuerteventura (Canary Islands) and Jeju
<i>Heterocypris similis</i> (Wierzejski, 1893)	Bonaire, Klein Bonaire and Aruba

Appendix L (Continued)

Species	Island/s
<i>Heterocypris symmetrica</i> (G.W. Müller, 1898)	Aldabra
<i>Hungarocypris asymmetrica</i> Victor and Fernando, 1981	Sulawesi
<i>Ilyocypris angulata</i> Sars, 1903	Okinoerabu-shima
<i>Ilyocypris bradyi</i> Sars, 1890	Gran Canaria (Canary Islands), La Gomera (Canary Islands), Fuerteventura (Canary Islands)
<i>Ilyocypris dentifera</i> Sars, 1903	Okinawa, Okinoerabu-shima, Jeju, Ulleung, Gaughwado and Yongjong
<i>Ilyocypris fallax</i> Brehm, 1928	New Zealand
<i>Ilyocypris gibba</i> (Ramdohr, 1808)	Fuerteventura (Canary Islands)
<i>Ilyocypris japonica</i> Okubo, 1990	Hateruma
<i>Ilyodromus kerguelensis</i> G.W. Müller, 1906	Kerguelen, Crozet and Prince Edward (South Africa)
<i>Ilyodromus lanaoensis</i> Victor and Fernando, 1981	Mindanao
<i>Ilyodromus obtusus</i> Sars, 1894	New Zealand
<i>Ilyodromus substriatus</i> Sars, 1894	New Zealand
<i>Ilyodromus varrovillius</i> (King, 1855)	New Zealand
<i>Indiacypris luxata</i> (Brady 1886)	Sri Lanka
<i>Ishizakiella miurensis</i> (Hanai, 1957)	Jeju
<i>Ishizakiella supralittoralis</i> (Schornikov, 1974)	Jeju and Kuril Islands
<i>Kennethia major</i> (Méhes, 1939)	Loyalty Islands and New Caledonia
<i>Kiwicythere anneari</i> Martens, 1992	Chatham
<i>Latinopsis patagonica</i> Karanovic and Datry, 2009	Madre de Dios Archipelago
<i>Leucocythere mirabilis</i> Kaufmann, 1892	Novaya Zemlya Archipelago
<i>Limnocythere conifera</i> Brehm, 1950	Tasmania

Appendix L (Continued)

Species	Island/s
<i>Limnocythere inopinata</i> (Baird, 1843)	Fuerteventura (Canary Islands), Vaigach and Novaya Zemlya Archipelago
<i>Limnocythere notodonta</i> Vávra, 1906	Tarawa Atol and Java
<i>Limnocythere stationis</i> Vávra, 1891	Socotra
<i>Limnocythere viaticum</i> Allison and Holden, 1971	Clipperton
<i>Limnocytherina sanctipatricii</i> (Brady and Robertson, 1869)	Jamaica, Vaigach and Novaya Zemlya Archipelago
<i>Madagascarcypris voeltzkowi</i> (G.W. Müller, 1898)	Madagascar
<i>Mangalocypris africana</i> (Hartmann, 1974)	Motupore, Mecherchar (Palau), Panikiang and Grande Comore (Comoro Islands)
<i>Mangalocypris appendix</i> Wouters, 1998	Papua New Guinea
<i>Mangalocypris eleotridis</i> (Harding, 1962)	Rennell
<i>Microdarwinula zimmeri</i> (Menzel, 1916)	Hainan
<i>Mungava intermedia</i> Wouters, 1987	Papua New Guinea and Laing
<i>Mungava munda</i> Harding, 1962	Santa Cruz (Galapagos Islands), Rennell, Papua New Guinea and Grande Comore (Comoro Islands)
<i>Mungava papuensis</i> Wouters, 1987	Laing
<i>Mungava recta</i> Maddocks, 1992	Galapagos Islands
<i>Mungava woutersi</i> Maddocks, 2005	Ovea
<i>Mungava xariessa</i> Maddocks, 2005	Mare
<i>Mytilocypris henricae</i> (Chapman, 1966)	Rottneest
<i>Nealecypris clavigera</i> (G.W. Müller, 1898)	Madagascar
<i>Neocypridopsis debilis</i> Klie, 1940	St. Martin and Barbuda

Appendix L (Continued)

Species	Island/s
<i>Neocypridopsis frigogena</i> (Graf, 1931)	Signy and South Orkney Islands
<i>Neocypridopsis inaudita</i> (Furtos, 1936)	Anegada, Klein Curacao, Bonaire, La Tortuga, St. Eustatius, St. Barthelemy, South Caicos, Grand Cayman, Mayaguana, Crooked, Eleuthera, Inagua, Puerto Rico, Anguilla, Cuba and Haiti
<i>Neocypridopsis mexicana</i> (Furtos, 1938)	Cuba
<i>Newnhamia fenestrata</i> King, 1855	New Zealand and Bismarck Archipelago
<i>Newnhamia patagonica</i> (Vávra, 1898)	Falkland Islands
<i>Notodromas persica</i> Gurney, 1921	Sri Lanka
<i>Oncocypris voeltzkowi</i> G.W. Müller, 1898	Madagascar
<i>Paracypria adnata</i> Smith and Kamiya, 2006	Yakushima Islands
<i>Paracypria inopinata</i> (Klie, 1939)	San Salvador
<i>Paracypria uberis</i> Maddocks, 2005	Mare and Ovea
<i>Penthesilenula aotearoa</i> (Rossetti et al., 1998)	New Zealand
<i>Penthesilenula brasiliensis</i> (Pinto and Kotzian, 1961)	New Caledonia
<i>Penthesilenula kohanga</i> (Rossetti et al., 1998)	New Zealand
<i>Penthesilenula malayica</i> (Menzel, 1923)	Java
<i>Penthesilenula sphagna</i> (Barclay, 1968)	New Zealand
<i>Perissocytheridea bicelliforma</i> Swain, 1955	San Salvador
<i>Perissocytheridea cribrosa</i> (Klie, 1933)	St. Martin, Curacao, Aruba and Anguilla

Appendix L (Continued)

Species	Island/s
<i>Physocypria affinis</i> Klie, 1933	St. Martin, Martinique, Antigua, Curacao, Bonaire, La Blanquilla, Iguana (Los Testigos), Los Testigos, Los Roques Archipelago, Margarita, St. Eustatius, Marie Galante, Barbuda and St. Lucia
<i>Physocypria capensis</i> (Sars, 1895)	Madagascar and Socotra
<i>Physocypria deformis</i> Klie, 1940	Jamaica
<i>Physocypria denticulata</i> (Daday, 1905)	San Salvador
<i>Physocypria furfuracea</i> (Brady, 1886)	Sri Lanka
<i>Physocypria kraepelini</i> G.W. Müller, 1903	Hainan
<i>Physocypria nipponica</i> Okubo, 1990	Hateruma and Jeju
<i>Physocypria sanctaeannae</i> Margalef, 1961	Margarita
<i>Plesiocypridopsis newtoni</i> (Brady and Robertson, 1870)	Lanzarote (Canary Islands), Tenerife (Canary Islands), Fuerteventura (Canary Islands), El Hierro (Canary Islands), Alegranza (Canary Islands) and Aldabra
<i>Pontoparta hartmanni</i> Keyser, 1975	Marco (USA) and Jamaica
<i>Pontoparta rara</i> Vávra, 1901	Papua New Guinea, Bismarck Archipelago and New Britain
<i>Potamocypris arcuata</i> (Sars, 1903)	Azores, Fuerteventura and El Hierro

Appendix L (Continued)

Species	Island/s
<i>Potamocypris hummelincki</i> Klie, 1933	St. Martin, Martinique, Antigua, Curacao, Klein Curacao, Bonaire, Aruba, La Blanquilla, Los Testigos, Margarita, Grenada, St. Eustatius, Barbuda, Nevis, St. Kitts and Barbados
<i>Potamocypris insularis</i> Allison and Holden, 1971	Clipperton
<i>Potamocypris mastigophora</i> (Meuthuen, 1910)	La Gomera (Canary Islands) and El Hierro (Canary Islands)
<i>Potamocypris ombrophila</i> Margalef, 1961	Margarita
<i>Potamocypris pallida</i> Alm, 1914	Madiera Islands and La Gomera (Canary Islands)
<i>Potamocypris sudzukii</i> Okubo, 1992	Yaeyama and Okinawa
<i>Potamocypris variegata</i> (Brady and Norman, 1889)	Jeju
<i>Potamocypris villosa</i> (Jurine, 1820)	La Gomera (Canary Islands) and Tenerife (Canary Islands)
<i>Prionocypris marplei</i> Chapman, 1963	New Zealand
<i>Pseudocandona albicans</i> (Brady, 1864)	La Gomera (Canary Islands), Tenerife (Canary Islands) and El Hierro (Canary Islands)
<i>Pseudocandona antilliana</i> Broodbakker, 1983	Martinique, Antigua, Dog, Vieques, Curacao, La Désirade, Jamaica, Cuba, Haiti and Barbados
<i>Pseudocandona caribbeana</i> Broodbakker, 1983	Jamaica
<i>Pseudocandona cubensis</i> Broodbakker, 1983	Cuba

Appendix L (Continued)

Species	Island/s
<i>Pseudocyprretta lineata</i> (Ma and Yu, 2020)	Hainan
<i>Pseudostrandesia calapanensis</i> (Tressler 1937)	Hainan and Taiwan
<i>Pseudostrandesia mamarilorum</i> (Victor and Fernando, 1981)	Hainan
<i>Renaudcypris gorongae</i> McKenzie, 1980	Solomon Islands and Gorong
<i>Renaudcypris luzonensis</i> Wouters, 1986	Luzon
<i>Renaudcypris wolffi</i> (Harding, 1962)	Rennell and Papua New Guinea
<i>Rudjakoviella prolongata</i> (Triebel, 1962)	Iguana (Los Testigos) and Margarita
<i>Sarscypridopsis aculeata</i> (Costa, 1847)	Fuerteventura (Canary Islands) and El Hierro (Canary Islands)
<i>Sarscypridopsis lanzarotensis</i> (Mallwitz, 1984)	Lanzarote (Canary Islands), Gran Canaria (Canary Islands), La Gomera (Canary Islands), Tenerife (Canary Islands), Fuerteventura (Canary Islands), La Palma (Canary Islands) and El Hierro (Canary Islands)
<i>Schellencandona yakushimaensis</i> Smith and Kamiya, 2006	Yakushima Islands
<i>Scottia insularis</i> Chapman, 1963	Stewart and New Zealand
<i>Scottia pseudobrowniana</i> Kempf, 1971	Jeju
<i>Stenocypris derupta</i> Vávra 1906	Hainan and Java
<i>Stenocypris hirutai</i> Smith and Kamiya, 2006	Hainan, Yakushima Islands, Jeju and Udo
<i>Stenocypris hislopi</i> Ferguson, 1969	Sri lanka, Kuroshima and Ulleung

Appendix L (Continued)

Species	Island/s
<i>Stenocypris major</i> (Baird, 1859)	St. Croix (US Virgin Islands), St. Martin, Martinique, Antigua, Curacao, Bonaire, Aruba, Margarita, La Désirade, Eleuthera, Jamaica, Puerto Rico, Montserrat, Marie Galante, Guadeloupe, Cuba, Haiti, St. Vincen, Barbados, Futuna, Wallis, New Caledonia, Sri Lanka, Hainan, Okinawa, Yoron, Tokunoshima and Okinoerabu-shima
<i>Stenocypris major major</i> (Baird, 1859)	Bonaire, Jamaica and Sri Lanka
<i>Stenocypris malayica</i> Victor and Fernando, 1981	Futuna, Wallis and Hainan
<i>Stenocypris smarginata</i> Daday, 1910	New Caledonia
<i>Stenocypris orientalis</i> Victor and Fernando, 1981	Hainan
<i>Stenocypris tsukagoshii</i> Smith and Kamiya, 2006	Yakushima Islands
<i>Strandesia bicuspis</i> (Claus, 1892)	Martin Garcia (Rio de la Plata)
<i>Strandesia botosaneanui</i> Broodbakker, 1983	Cuba
<i>Strandesia cavernicola</i> Broodbakker, 1983	Cuba and Haiti
<i>Strandesia flavescens</i> Klie, 1932	Taiwan and Jeju
<i>Strandesia freyi</i> Victor and Fernando, 1981	Hainan
<i>Strandesia longula</i> Broodbakker, 1983	St. Martin, Anegada, Curacao, Bonaire, La Désirade, St. Eustatius, Tortola, Culebra, Grand Cayman, Providenciales, Mayaguana, Crooked, Eleuthera, Cuba, Haiti and San Salvador

Appendix L (Continued)

Species	Island/s
<i>Strandesia marmorata</i> (Brady 1886)	Sri Lanka
<i>Strandesia pistrix</i> Broodbakker, 1983	Jamaica and Haiti
<i>Strandesia purpurascens</i> (Brady, 1886)	Java
<i>Strandesia reticulata</i> (Daday, 1898)	Sri Lanka
<i>Strandesia rouxi</i> Méhes, 1939	New Caledonia
<i>Strandesia sphaeroidea</i> Broodbakker, 1983	Antigua and Marie Galante
<i>Strandesia stocki</i> Broodbakker, 1983	St. John (US Virgin Islands), St. Martin, Martinique, Jamaica, Dominica, St. Kitts, Cuba and Haiti
<i>Strandesia tenuicauda</i> (Brady, 1886)	Sri Lanka
<i>Strandesia vavrai vavrai</i> (G.W. Müller, 1898)	Madagascar
<i>Strandesia vinciguerrae</i> (Masi, 1905)	La Gomera (Canary Islands), Futuna and Wallis
<i>Strandesia wierzejskii</i> (Grochmalicki, 1915)	Java
<i>Tanocypris alfonsi</i> Nagler et al., 2014	Jeju
<i>Tanocypris centa</i> Chang et al., 2012	Jeju
<i>Tanocypris madagascarensis</i> (G.W. Müller, 1898)	Madagascar
<i>Terrestricypris arborea</i> Schornikov, 1980	Solomon Islands
<i>Terrestricythere ivanovae</i> Schornikov, 1969	Jeju
<i>Thalassocypris sarbui</i> Maddocks, 1993	Jamaica
<i>Tonnacypris glacialis</i> (Sars, 1890)	Vaigach and Novaya Zemlya Archipelago
<i>Trajancypris clavata</i> (Baird, 1838)	Tenerife (Canary Islands)
<i>Tungocypridopsis lairdi</i> (Victor and Fernando, 1978)	Nukunono (Tokelau)

Appendix L (Continued)

Species	Island/s
<i>Vestalenula cornelia</i> Smith et al., 2006	Hainan, Anami-Oshima, Chichi Jima and Yakushima Islands
<i>Vestalenula cylindrica</i> (Straub, 1952)	Jeju
<i>Vestalenula daps</i> (Harding, 1962)	Rennell and Solomon Islands
<i>Vestalenula lundi</i> (Neale and Victor, 1978)	Sri Lanka
<i>Vestalenula marmonieri</i> Rossetti and Martens, 1999	New Caledonia
<i>Vestalenula molopoensis</i> (Martens and Rossetti, 1997)	Socotra
<i>Xestoleberis arcturi</i> Triebel, 1956	Galapagos Islands
<i>Xestoleberis curassavica</i> Klie, 1939	San Salvador
<i>Zonocypris costata</i> (Vávra, 1897)	Madagascar
<i>Zonocypris elegans</i> G.W. Müller, 1898	Madagascar

Appendix M Distribution of ostracods recorded from 156 islands outside the Mediterranean, including the archipelago (Ostracoda diagnosed using carapace, valves, sp. and cf. are not included in the list, and the archipelago is shown as a single island on the map.), Is: island code. Is1: Easter Island, Is2: Clipperton Island, Is3: Galapagos Islands, Is4: Santa Cruz Island (Galapagos), Is5: Madre de Dios Archipelago, Is6: Falkland Islands, Is7: Signy Island, Is8: South Orkney Islands, Is9: South Georgia Island, Is10: Sandwich Islands, Is11: Martin Garcia Island (Rio de la Plata), Is12: Curacao Island, Is13: Klein Curacao Island, Is14: Bonaire Island, Is15: Klein Bonaire Island, Is16: Aruba Island, Is17: La Blanquilla Island, Is18: Los Reques Archipelago, Is19: Cubagua Island, Is20: La Tortuga Island, Is21: Trinidad Island, Is22: Iguana Island (Los Testigos), Is23: Los Testigos Island, Is24: Margarita Island, Is25: Grenada Island, Is26: St. Vincen Island, Is27: St. Lucia Island, Is28: Barbados Island, Is29: Martinique Island, Is30: Dominica Island, Is31: Marie Galante Island, Is32: Guadeloupe Island, Is33: La Desirade Island, Is34: Santies Islands, Is35: Antiqua Island, Is36: St. Eustatius Island, Is37: Montserrat Island, Is38: Barbuda Island, Is39: Nevis Island, Is40: St. Barthelemy Island, Is41: St. Kitts Island, Is42: Anguilla Island, Is43: Saba Island, Is44: St. Martin Island, Is45: St. Croix (US Virgin Islands), Is46: St. John Island (US Virgin Islands), Is47: St. Thomas Island (US Virgin Islands), Is48: Tortola Island, Is49: Virgin Gorga Island (British Virgin Islands), Is50: Anegada Island, Is51: Vieques Island, Is52: Culebra Island, Is53: Puerto Rico Island, Is54: Hispaniola Island (Dominican and Haiti), Is55: Tortugillo Island, Is56: Providenciales Island, Is57: South Caicos Island, Is58: Inagua Island, Is59: Crooked Island, Is60: San Salvador Island, Is61: Eleuthera Island, Is62: Bahamas Island, Is63: Mayaguana Island, Is64: Cuba Island, Is65: Jamaica Island, Is66: Marco Islans (USA), Is67: Dog Island, Is68: Grand Cayman, Is69: Funk Island (Canada), Is70: Azore Islands, Is71: Madiera Islands, Is72: Lanzarote Island, Is73: Gran Canaria Island, Is74: La Gomera Island, Is75: Tenerife Island, Is76: Fuerteventura Island, Is77: La Palma Island, Is78: El Hierro Island, Is79: Alegranza Island, Is80: Prince Edward Island (South Africa), Is81: Crozet Island, Is82: Kerguelen island,

Appendix M (Continued) Is83: Grande Comore Island (Comoro islands), Is84: Silhouette Island (Seychelles), Is85: Socotra Island, Is86: Sri Lanka Island, Is87: Java Island, Is88: Sulawesi Island, Is89: Panikiang Island, Is90: Mindanao Island, Is91: Hainan Island, Is92: Taiwan Island, Is93: Kohama Island, Is94: Kuroshima Island, Is95: Yonaguni Island, Is96: Hateruma Island, Is97: Yaeyama Islands, Is98: Sesoko Island, Is99: Okinawa Island, Is100: Yoron Island, Is101: Tokunoshima Island, Is102: Anami Oshima Island, Is103: Okinoerabu shima Island, Is104: Chichi Jima Island, Is105: Yakushima Islands, Is106: Jeju Island, Is107: Udo Island, Is108: Kuril Islands, Is109: Vaigach Island, Is110: Novaya Zemlya Archipelago, Is111: Mecherchar Island (Palau), Is112: New Guinae Island (Papua New Guinae and New Guinae), Is113: Laing Island, Is114: Bismarck Archipelago, Is115: Motupore Island, Is116: Solomon Islands, Is117: Rennel Island, Is118: Futuna Island (Vanuatu), Is119: Fiji Island, Is120: New Caledonia Island, Is121: Loyalty Islands, Is122: Ovea Island, Is123: New Zealand Island, Is124: Steward Island, Is125: Campbell Island, Is126: Macquarie Island, Is127: Tasmania Island, Is128: Rottneest Island, Is129: West Wallabi Island, Is130: Chatham Island, Is131: Cook Island, Is132: Oceanic Islans, Is133: Samoa Island (Tonga), Is134: Wallis Island, Is135: Futuna Island, Is136: Nuku Hiva Island, Is137: Marquesas Islands, Is138: Nukunono Island (Tokelau), Is139: Tarawa Atol, Is140: Hawaii Island, Is141: Mare Island, Is142: Rangiroa Island, Is143: Gorong Island, Is144: Tobago Island, Is145: Terre De Haut Island, 146: Madagascar Island, Is147: Aldabra Island, Is148: Luzon Island, Is149: Ganghwado Island, Is150: Yongjong Island, Is151: Togjok Island, Is152: Seonyu Island, Is153: Sohuksan Island, Is154: Wonsan Island, Is155: Ulleung Island, Is156: New Britein Island.

Appendix L (Continued)

