## 45. OSTRACODA FROM DSDP LEG 42B

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## INTRODUCTION

The Pleistocene ostracode assemblage, described in the systematic portion of this report, includes several taxa described previously from different stratigraphical levels of middle Sarmatian, Meotian, Pontian, and Dacian of the circum-Carpathian and from Aktshagylian and Apsheronian of the Ponto-Caspian regions. In addition, many species have been found in the Recent faunas of the Black Sea and the Caspian Sea.

On the basis of their known ranges, one could be tempted to assume that the ostracode assemblage contains an admixture of older reworked elements. For many reasons, however, such a conclusion cannot be supported under the present state of knowledge. The Ponto-Caspian Basin developed, after becoming isolated from the Mediterranean Sea, into a brackish and fresh-water basin, relict of the Neogene Paratethys; a brief link with the Mediterranean Sea existed only in Meotian time. Later on, in the Black Sea area, successive basins followed: the Pontic Basin with connections to the Caspian and Pannonian basins existed in early Pontian (with the so-called Egeean migration of the fauna) and probably middle Pontian time, succeeded by the Kimmeric, Kuialnik, and Gurian basins (the latter two having again connections with the Caspian Basin), each of which gradually became a fresh-water basin. They, in turn, were followed by the fresh-water Ceaudian and Palaeoeuxin basins.

Mediterranean waters penetrated into the Black Sea waters in Uzumlar time. A new isolation followed and then the link with Mediterranean was re-established in Karangat time (Riss-Würm). During the Würm glacial epoch a break in this connection occurred and the brackish to fresh waters of Neoeuxinic Basin were prevalent. Connection with the Mediterranean Sea was re-established in Holocene time.

Upper Neozoic ostracode faunas of the Ponto-Caspian Basin were developed by repeated populatings by varying elements from nearby basins; the migrations and populations in the different periods led to the mixed assemblages. Analysis of the components of the fauna permits a separation of ostracode groups relative to their different geographic origins. They originated initially from allopatric speciation within a basin's limits and then migrated into neighboring zones. Thus the distribution in time of different species was not the same in all basins. It must be emphasized that the main part of the Pleistocene ostracode fauna from the Ponto-Caspian Basin is of Pontian origin. The early Pontian represents the maximum epoch of Pontic basin

extension, with the largest faunal migration. Early Pontian faunal elements penetrated from western Europe toward Aral Lake. However, the genera and species from the Ponto-Caspian Basin are not taxa inherited from the Meotian of the same domain but, rather, immigrated from the neighboring Pannonian and Egeean basins (Ebersin et al., 1966). This phenomenon might be explained by premature isolating and freshening of the waters from the Pannonian Basin, relative to the outer Carpathian regions. Once the connections were re-established between the Pannonian and Ponto-Caspian basins, good circulation of fauna followed. With the permanent freshening tendency of the Dacic Basin waters after Pontian time (in the Romanian stage there are only fresh-water faunas), the Pontian type of fauna persisted into the Euxinic and Caspian basins where brackish waters lasted beyond Kimmerian time into Pleistocene and beyond.

The Pannonian faunal migration toward the east explains the presence in the Pleistocene of the Ponto-Caspian Basin of such species as Amplocypris subacuta and Candona (C.) balcanica, as well as specimens of the Candona (C.) lobata, Candona (C.) labiata, Candona (C.) flectimarginata, Candona (C.) nonreticulata group.

Callistocythere diffusa (probably a primitive taxon) and Hemicytherura and Cytheroma genera are not found in fossil deposits in Ponto-Caspian regions; they are, however, abundant with numerous species in the Recent fauna of the Black Sea.

Loxoconcha ornata ornata, a prevalent species in our samples, has been described only from middle Sarmatian (Bessarabian) deposits. It survived, unchanged, in isolated ecologic niches up to Pleistocene time.

*Paraconadona*, relatively frequent in our samples, lives in fresh-water rivers, lakes, pools, etc. In the evolution of the Black Sea its first appearance was in early Quaternary time (Ceaudian and Palaeoeuxinic basins).

*Candona* species are known from Mesozoic to present time, living in a range of environments. They live mostly in fresh water, but some species live in brackish water; they do not swim but move freely in muddy bottoms.

*Bacunella* has been found, in several places, in fresh water and brackish deposits of the Pliocene in Europe, and lives today in the Caspian Sea.

*Cypria* is known from lower Tertiary into Recent deposits. Most species live in fresh-water lakes, pools, etc., but prefer an environment with abundant vegetation.

Leptocythere is typically marine but also is abundant in brackish water, it has a worldwide distribution. Fossil species are known from Oligocene time to the present.

*Loxoconcha* extends from early Tertiary to Recent time. It has a worldwide distribution, inhabiting the littoral zone. zone.

## CONCLUSIONS

Two ostracode assemblages can be distinguished in DSDP Leg 42B samples; a Pleistocene association, comprising mixed ostracode faunas of different paleogeographical origins, and a pre-Recent ostracode community containing the genera *Hemicytherura* and *Cytheroma*.

At the moment, in the Pleistocene cores, it is not possible to make any stratigraphical divisions on the basis of the ostracode faunas.

### SYSTEMATICS.

#### Suborder PODOCOPA Sars, 1866

#### Family CYPRIDIDAE Baird, 1850

#### Subfamily CYPRIDINAE Baird, 1850

Genus AMPLOCYPRIS Zalanyi, 1944

## Amplocypris aff. subacuta Zalanyi

(Plate 9, Figures 3, 4)

Amplocypris subacuta Zalanyi, 1944, p. 33, pl. 3, fig. 9-12.
Amplocypris cfr. subacuta Zalanyi, Sokac, 1972, p. 35, pl. 11, fig. 1-4.

**Dimensions:** L = 0.78 mm; h = 0.36 mm.

**Distribution:** This species has so far been found only in the Pannonian deposits (particularly in the sediments of the southeastern part of the Pannonian basin).

#### Subfamily CANDONINAE Kaufmann, 1960

Genus CANDONA Baird, 1845

#### Subgenus CASPIOCYPRIS Mandelstam, 1956

## Candona (Caspiocypris) filona (Livental) (Plate 1, Figure 1)

Caspiocypris filona (Livental), Suzin, 1956, p. 26, pl. 13, fig. 1, 2; Mandelstam et al., 1962, p. 82, pl. 3, fig. 4, 5.

**Dimensions:** L = 0.56 mm; h = 0.39 mm.

**Distribution:** The Pontian of Kuban, Aktshagylian, and Apsheronian deposits from Turkmenistan. Sokac (1972, p. 41) states that *Caspiocypris filona* is similar to *C. labiata* (Zalanyi). (It represents a modification of *C. labiata* due to environmental conditions.)

#### Candona (Caspiocypris) elongata (Schweyer) (Plate 1, Figure 5; Plate 2, Figure 4)

Bythocypris elongata Schweyer, 1948, p. 26, pl. 4, fig. 7, 8.

Candona elongata (Schweyer), Mandelstam et al., 1962, p. 138, pl. 17, fig. 2.

**Dimensions:** L = 1.12 mm; h = 0.54 mm.

Distribution: Upper Pliocene and lower Pleistocene of Turkmenistan.

#### Subgenus CASPIOLLA Mandelstam, 1960

#### Candona (Caspiolla) balcanica (Zalanyi)

(Plate 1, Figure 6; Plate 9, Figures 1, 2)

Paracypria balcanica Zalanyi, 1929, p. 52-55, text-fig. 19, 20, pl. 2, fig. 7.

Camtocypria balcanica (Zalanyi), Zalanyi, 1959, p. 225, Gramann, 1969, p. 492, pl. 33, fig. 1-7.

Caspiolla balcanica (Zalanyi), Mandelstam and Schneider, 1963, p. 90, pl. 7, fig. 11, 12; Stanceva, 1964, p. 209, pl. 1, fig. 1, 2.

Candona (Caspiolla) balcanica (Zalanyi), Sokac, 1972, p. 46, pl. 18, fig. 7-14.

Candona balcanica (Zalanyi), Olteanu, 1974, pl. 1, fig. 4, pl. 2, fig. 4, 5.

**Dimensions:** L = 1.37 mm; h = 0.66 mm.

**Distribution:** This species was described from the upper Pontian of Serbia (*Congeria balatonia* Zone). It has also been found in the Meotian deposits of the Dacic basin, Pontian deposits in southern parts of USSR (Caucasus, Azerbaijan, Turkmenistan, Basarabia), in Bulgaria, Greece, Romania, and Yugoslavia.

#### Candona (Caspiolla) confragosa Markova (Plate 9, Figure 7)

Candona confragosa Markova, Mandelstam et al., 1962, p. 137, pl. 16, fig. 7, 8.

**Dimensions:** L = 1.12 mm; h = 0.67 mm.

Distribution: The upper Pliocene and lower Pleistocene of Turkmenistan.

#### Candona (Caspiolla) liventalina (Evlachova)

(Plate 1, Figure 7, Plate 2, Figure 7)

Bythocypris liventalina (Evlachova), Svejer, 1949, p. 26, pl. 4, fig. 1. Caspiolla liventalina (Evlachova), Mandelstam et al., 1962, p. 76, pl. 2, fig. 6.

**Dimensions:** L = 0.71 mm; h = 0.39 mm.

**Distribution:** This species was found at several places in the upper Pliocene and post-Pliocene of the USSR (western Turkmenistan, Azerbaijan).

> Candona (Caspiolla) gracilis Livental (Plate 1, Figures 8, 9; Plate 2, Figures 1-3)

Candona gracilis Livental, 1929, p. 52, pl. 1, fig. 42, 43.

Caspiolla gracilis (Livental), Mandelstam et al., 1962, p. 77, pl. 2, fig. 2.

**Dimensions:** L = 0.81 mm; h = 0.46 (female right valve); L = 0.84 mm; h = 0.44 mm (male right valve).

Distribution: The upper Pliocene and lower Pleistocene deposits of western Turkmenistan and Azerbaijan (USSR).

#### Subgenus PONTONIELLA Mandelstam, 1960

Candona (Pontoniella) acuminata striata Mandelstam (Plate 3, Figures 3-7)

Pontoniella acuminata var. striata Mandelstam var. n, Mandelstam and Schneider, 1963, p. 86, pl. 6, fig. 4, Gramann, 1969, p. 494, pl. 32, fig. 1, 2.

**Dimensions:** L = 0.78 mm; h = 0.33 mm.

Distribution: This species was found in the Pontian deposits of the USSR (Crimea, Caucasus, Basarabia) and in Bulgaria, Romania, and Greece.

**Remarks:** C. (P.) acuminata striata is nearest to the species C. (P.) hastata Krstic (described from the upper Pontian of Yugoslavia).

#### Candona (Pontoniella) schemachensis Mandelstam (Plate 9, Figure 5)

Pontoniella schemachensis Mandelstam, Mandelstam et al., 1962, p. 72, pl. 1, fig. 3, 4.

**Dimension:** L = 0.56 mm; h = 0.19 mm.

Distribution: The Kuialnikian of Apscheronian of Turkmenistan, cir-Caucasus, and Basarabia (USSR).

**Remarks:** The striation of the valve is due to certain ecological conditions.

### Candona (Pontoniella) sp1 (Plate 9, Figure 6)

Remarks: This specimen is possibly a juvenile form of the Candona (Pontoniella) schemachensis Mandelstam.

Genus PARACANDONA Hartwig, 1899

Paracandona aff. verrucosa (Stanceva) (Plate 3, Figures 1, 2; Plate 8, Figure 7)

Candona verrucosa Stanceva, 1964.

Dimensions: L = 1.01 mm; h = 0.57 mm.

Distribution: The Pliocene of Bulgaria. I found this species in the lower Dacian of the Dacic basin (Romania). The genus is found in Pliocene to Recent sediments worldwide.

Genus BACUNELLA Schneider, 1958

Bacunella dorsoarcuata (Zalanyi) (Plate 6, Figures 3, 4)

Pontocypris dorsoarcuata Zalanyi, 1929, p. 37-40, fig. 11, 12.

Bythocypris guriana Svejer, 1949, p. 62, pl. 1, fig. 1-8.

Caspiella dorsoarcuata (Zalanyi) Suzin, 1956, p. 21, pl. 13. fig. 15, 16.

Bacunella dorsoarcuata (Zalanyi), Mandelstam et al., 1962, p. 73, pl. 1, fig. 6, 7; Mandelstam and Schneider, 1963, p. 91, pl. 8, fig. 5, pl. 9, fig. 3, 4; Sejdaeva-Kulieva, 1966, p. 110, pl. 5, fig. 4; Gramann, 1969, p. 495, pl. 32, fig. 5; Sokac, 1972, p. 63, pl. 29, fig. 8-12.

**Dimensions:** L = 0.56 mm; h = 0.35 mm.

Distribution: This species was described from the Pontian deposits of Serbia, and afterwards was found in the Pontian from Hungary, Bulgary, Greece, and Romania. It is also know from the Pliocene and post-Pliocene of the southern parts of the USSR (Caucasus, Crimea, Turkmenistan), as well as from the Recent fauna of the Caspian Sea.

#### Family CYTHERIDAE Baird, 1850

## Subfamily LEPTOCYTHERINAE Hanai, 1957

## Genus LEPTOCYTHERE Sars, 1925

Leptocythere striatocostata (Svejer) (Plate 4, Figure 7)

Cythere stiatocostata Svejer, 1949, p. 27, pl. 9, fig. 8; Schornikov, 1969, p. 187, pl. 14, fig. 2.

**Dimensions:** L = 0.52 mm; h = 0.31 mm.

Distribution: The species is known from the Black Sea and Caspian Sea. It is also found in the Pliocene and post-Pliocene deposits from southern USSR.

Remarks: The species of the subfamily Leptocytherinae. described here, are assigned to the genus Leptocythere sensu larger.

### Leptocythere bacuana (Livental) (Plate 5, Figure 1; Plate 9, Figure 8)

Leptocythere bacuana (Livental), Mandelstam et al., 1962; p. 227, pl. 37, fig. 3; Schornikov, 1969, pl. 15, fig. 3. **Dimensions:** L = 0.58 mm; h = 0.30 mm.

Distribution: Fossil specimens are known from the Pliocene and lower Pleistocene (Apsheronian) deposits of Turkmenistan and Azerbaijan. It has also been found in Recent fauna of the Black Sea.

## Leptocythere bosqueti (Livental)

(Plate 4, Figure 2; Plate 6, Figures 2, 6; Plate 7, Figure 11)

Cythere bosqueti Livental, 1929, p. 24, fig. 27.

Leptocythere bosqueti (Livental), Suzin, 1956, p. 81, pl. 2, fig. 8; Stanceva, 1965, p. 25, pl. 2, fig. 7; Mandelstam et al., 1962, p. 225, pl. 36; Sejdaeva-Kulieva, 1972, p. 68, pl. 31, fig. 14. Dimensions: L = 0.53 mm; h = 0.26 mm.

Distribution: This species is known from the Pliocene and post-Pliocene of the southern parts of the USSR (north Caucasus, Turkmenistan), in the Pontian of Bulgary and Serbia. It is also found in the Recent fauna of the Caspian Sea.

#### Leptocythere andrusovi (Livental) (Plate 7, Figure 5)

Cythere andrusovi Livental, 1929, p. 16, pl. 1, fig. 6, 7.

- Leptocythere andrusovi (Livental), Suzin, 1956, p. 91, 92, pl. 3, fig. 2;
- Mandelstam et al., 1962, p. 195-196, pl. 30, fig. 13, 14; Sokac, 1972, p. 69, pl. 32, fig. 1, 2.

**Dimensions:** L = 0.66 mm; h = 0.34 mm.

Distribution: The Pontian, Aktshagylian, and Apsheronian of the Azerbaijan, Caucasus, and Turkmenistan. It is also known from the Pontian of Bulgaria and Serbia.

#### Leptocythere multituberculata (Livental) (Plate 7, Figure 4)

Cythere multituberculata Livental, 1929, p. 14, pl. 1, fig. 36-38; Svejer, 1949, p. 26, pl. 9, fig. 1-3; Suzin, 1956, p. 81, pl. 2, fig. 1; Mandelstam et al., 1962, p. 229, pl. 37, fig. 6; Stanceva, 1972, p. 24-25, pl. 1, fig. 3; Sejdaeva-Kulieva, 1966, p. 90, pl. 3, fig. 10; Gramann, 1969, p. 468, pl. 34, fig. 12; Sokac, 1972, p. 71, pl. 32, fig. 14, 15. Dimensions: L = 0.44 mm; h = 0.26 mm.

Distribution: Fossil specimens are known from the Pontian and Apsheronian of Azerbaijan, Turkmenistan, and north Caucasus. It has also been found in the Pontian of Bulgaria, Yugoslavia, and Greece and in the Recent fauna from the Caspian Sea.

#### Leptocythere cymbula (Livental)

(Plate 4, Figure 9; Plate 7, Figure 3)

Cythere cymbula Livental, 1929, p. 21, pl. 1, fig. 25.

Cythere propingua Livental, 1929, p. 21, pl. 1, fig. 21, 22.

Leptocythere aff. propingua Livental, Suzin, 1956, p. 119, pl. 5, fig. 21.

Leptocythere propinqua (Livental), Mandelstam et al., 1962, p. 201, pl. 31, fig. 18 Sejdaeva-Kulieva, 1966, p. 92-93, pl. 3, fig. 14.

Leptocythere (Leptocythere) cymbula (Livental), Schornikov, 1969, p. 35, 36, fig. 3.

Leptocythere cymbula (Livental), Sokac, 1972, p. 69, pl. 32, fig. 7-9. Dimensions: L = 0.49 mm; h = 0.24 mm.

Distribution: This species has been found by Schornikov (1966) in Recent faunas from the Black Sea and the Caspian Sea. He compared these forms with the fossil species from Pliocene and post-Pliocene of Turkmenistan, western Caucasus and concluded that the species Leptocythere propingua (Livental), L. accurata Schneider, L. aediculata Stepanajtis represent synonyms of the species L. cymbula (Livental).

#### Leptocythere nostrata (Livental) (Plate 4, Figure 3)

Leptocythere nostrata (Livental), Mandelstam et al., 1962, p. 200, pl. 31, fig. 16, 17.

Dimensions: L = 0.49 mm; h = 0.20 mm.

Distribution: The Aktshagylian and Apsheronian of Turkmenistan and cir-Caucasus.

#### Leptocythere ergeniensis (Schweyer) (Plate 4, Figure 1; Plate 7, Figure 9)

Cythere ergeniensis Schweyer, 1949, p. 34, pl. 8, fig. 4-6.

Leptocythere ergeniensis (Schweyer), Mandelstam et al., 1962, p. 223,

pl. 36, fig. 4. Dimensions: L = 0.56 mm; h = 0.29 mm.

Distribution: The upper Pliocene and lower Pleistocene of Turkmenistan and western Caucasus.

#### Leptocythere aff. caspia (Livental) (Plate 4, Figure 4)

Leptocythere caspia (Livental), Mandelstam et al., 1962, p. 232, pl. 37, fig. 10.

**Dimensions:** L = 0.43 mm; h = 0.29 mm.

Distribution: The Aktshagylian and Apsheronian of Turkmenistan and Azerbaijan.

### **TOCYTHERE Ruggieri**, 1953

Callistocythere cf. diffusa (G.W. Müller) (Plate 5, Figure 4; Plate 7, Figure 10)

Cythere diffusa G.W. Müller, 1894, p. 354, pl. 28, fig. 16.

Callistocythere diffusa (G.W. Müller), Caraion, 1967, p. 74, textfig. 19.

Dimensions: L = 0.54 mm; h = 0.31 mm.

Distribution: Mediterranean Sea, Black Sea, and Atlantic Ocean.

### Subfamily HEMICYTHERINAE Puri, 1953

Genus HETEROCYTHEREIS Elofson, 1941

#### Heterocythereis spi (Plate 6, Figure 5)

Dimensions: L = 0.51 mm; h = 0.34 mm.

#### Subfamily CYTHERIDEINAE Sars, 1925

Genus CYTHERISSA Sars, 1928

#### Cytherissa bogatschovi (Livental)

(Plate 6, Figure 1)

Cytherissa bogatschovi (Livental), Svejer, 1949, p. 37, pl. 8, fig. 2, Mandelstam et al., 1962, p. 190, pl. 30, fig. 1, 2.

Dimensions: L = 0.35 mm; h = 0.24 mm (juvenile form).

Distribution: The middle and upper Pliocene of Turkmenistan and Azerbaijan. I found this species in the upper Pontian and Dacian deposits of the Dacic basin (Romania).

#### Cytherissa bogatschovi plana Klein

### (Plate 5, Figure 5; Plate 6, Figure 1)

Cytherissa bogatschovi plana Klein, Mandelstam et al., 1962, p. 190, pl. 30, fig. 3.

Dimensions: L = 0.65 mm; h = 0.37 mm.

Distribution: The lower Pleistocene (Apsheronian) of Turkmenistan and Azerbaijan.

#### Subfamily CYTHERURINAE G.W. Müller, 1894

Genus HEMICYTHERURA Elofson, 1941

Hemicytherura spi (Plate 7, Figure 7)

**Dimensions:** L = 0.31 mm; h = 0.27 mm (juvenile form).

#### Subfamily LOXOCONCHINAE Sars, 1925

Genus LOXOCONCHA Sars, 1866

#### Loxoconcha eichwaldi Livental

(Plate 5, Figures 6, 7; Plate 7, Figure 2)

Loxoconcha eichwaldi Livental, 1929, p. 34, pl. 1, fig. 42, 43; Suzin, 1956, p. 72, pl. 6, fig. 10, 11; Mandelstam et al., 1962, p. 155, pl. 22, fig. 2-5.

Dimensions: L = 0.70 mm; h = 0.42 mm.

Distribution: The Aktshagylian and Apsheronian of Turkmenistan and western cir-Caucasus.

#### Loxoconcha petasa (Livental)

(Plate 5, Figure 8; Plate 7, Figure 1)

Loxoconcha petasus Livental, 1929, p. 33, pl. 1, fig. 39-41. Loxoconcha petasa Livental, Suzin, 1956, p. 67, pl. 6, fig. 4, 5; Mandelstam et al., 1962, p. 164, pl. 25, fig. 4-6.

Dimensions: L = 0.68 mm; h = 0.34 mm.

Distribution: This species has been found in the Pontian of Yugoslavia, in the Pliocene of Azerbaijan, Turkmenistan, and north Caucasus, in the post-Pliocene of west Turkmenistan, as well as in the Recent fauna of the Caspian Sea.

#### Loxoconcha schweyeri (Suzin) (Plate 8, Figure 6)

Loxoconcha schweyeri Suzin, 1956, p. 70-71, p. 6, fig. 7; Sokac, 1972, p. 86, pl. 45, fig. 8-12.

Dimensions: L = 0.67 mm; h = 0.34 mm.

Distributions: This species was first described from Pontian sediments of northern Caucasus, and then it has been found in the Pontian of Bulgaria and Yugoslavia.

#### Loxoconcha ornata ornata Schneider

(Plate 7, Figure 8; Plate 8, Figures 1-5)

Loxoconcha ornata Schneider, 1949, p. 140, pl. 8, fig. 1.

Loxoconcha ornata ornata Schneider, Stanceva, 1972, p. 106, pl. 3?, fig. 11.

**Dimensions:** L = 0.44 mm; h = 0.25 mm (Plate 7, Figures 3-5); L= 0.54 mm; h = 0.32 mm (Plate 7, Figures 1, 2).

Distribution: The middle Sarmatian (sensu Barbot de Marny 1966), and the Besarabian of Bulgaria and southern USSR.

### **INCERTAE FORMS**

#### Candona (Caspiolla) ex gr. lobata (Zalanyi) (Plate 1, Figure 4)

Paracypris lobata Zalanyi, 1929, p. 55-57, text-fig. 21, 22, pl. 2, fig. 8.

Caspiolla lobata (Zalanyi), Mandelstam and Schneider, 1963, p. 89, 90, p. 8, fig. 10.

**Dimensions:** L = 0.77 mm; h = 0.35 mm.

Distribution: This species was first found in the upper Pontian of Serbia (Congeria balatanica Zone). It has also been found at numerous places in the Pontian deposits of Azerbaijan, Turkmenistan, Crimea, Caucasus, Basarabia (USSR), and in Bulgaria.

#### Candona (Caspiocypris) ex gr. labiata (Zalanyi) (Plate 1, Figure 4)

Paracypris labiata Zalanyi, 1929, p. 48-51, text-fig. 17, 18, p. 12, fig. 9.

Caspiocypris labiata (Zalanyi), Mandelstam and Schneider, 1963, p. 98, pl. 10, fig. 6, 7.

Candona (Caspiocypris) labiata (Zalanyi), Sokac, 1972, p. 40, pl. 15, fig. 8-13.

Dimensions: L = 0.74 mm; h = 0.33 mm.

Distribution: The species was described from the upper Pontian of Serbia. It has also been found in the Pontian of the Caucasus and Basarabia (USSR).

#### Candona (Caspiolla) ex gr. flectimarginata Sokac (Plate 2, Figure 6; Plate 6, Figure 2)

Candona (Caspiolla) flectimarginata Sokac, Sokac, 1972, p. 47, pl. 20, fig. 1-6.

Dimensions: L = 0.81 mm; h = 0.36 mm.

Distribution: This species was described from the upper Pontian of Yugoslavia. It is also characteristic of these deposits in the south part of the Pannonian basin.

#### Candona (Lineocypris) ex gr. nonreticulata Sokac (Plate 1, Figure 2)

Candona (Lineocypris) nonreticulata Sokac, 1972, p. 54, pl. 24, fig. 1-7.

**Dimensions:** L = 0.79 mm; h = 0.41 mm (juvenile form). Distribution: This species was described from the upper

## Cytheroma (?) sp.

(Plate 7, Figure 6)

Dimensions: L = 0.46 mm; h = 0.21 mm.

Pannonian.

#### ACKNOWLEDGMENTS

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APPENDIX			
Occurrences of Ostracode Species in	Leg 4	42B	Cores

Sample		Number	
(Interval in cm)	Species	of Forms	Adult/Juvenile
Hole 379A			
8-5, 64-66	Heterocythereis sp	1	Juvenile
	Cytherissa boyatschovi		
	var. <i>plana</i>	1	Juvenile
9-1. 120-122	Leptocythere bacuana	1	Juvenile
	Leptocythere cymbula	1	Juvenile
	Leptocythere caspia	1	Juvenile
	Callistocythere aff diffusa	1	Adult
1-5, 15-17	Leptocythere bacuana	1	Juvenile
	Loxoconcha eichwaldi	1	Juvenile
	Candona (Caspiolla) gracilis	2	Juvenile
1-5, 26-27	Candona (C) gracilis	2	Adult
	Lentocythere multituberculata	1+1	Adult, juvenile
	Lentocythere caspia	1	Adult
	Leptocythere bacuana	ĩ	Juvenile
	Candona (Caspiocy pris) filona	î	Adult
	Cytheroma sp	1	Adult
	Cytherissa hogatschovi	î	Juvenile
5-2 48-50	Unidentified fragments of Candona genus		
0-3 104-106	Candona (C) aff gracilis	Fragments	
1.2 98-100	Candona (C) off gracilis	Fragments	
6 CC	Loxoconcha ornata ornata	2	Iuvenile
0, 00	Lentoevthere caspia	1	Adult
	Leptocythere bacuana	1	Adult
7	Racumella dorsogranata	2	Iuvenile
, CC	Loroconcha off cichwaldi	1 (fragm)	Adult
10, CC	Loxoconcha all elenwala	1 (Hagin.)	Iuvenile
2 1 102 104	Candona and an annation late	1	Adult
2-1, 102-104	Candona $sp_3 ex gr. nonreticulata$	1	Juganila
	Candona (C.) liventalina	3	Juvenne Adult (2)
r 00	Candona $sp_2 ex gr. labiata$	1	Adult (:)
5, 00	Leptocythere bacuana	1	Adult
6.00	Candona (C.) liventalina	1	Adult
-6, CC	Loxoconcha elchwaldi	1	Adult
0 1 66 60	Paracandona all verrucosa	1	Adult
8-4, 66-68	Candona (C.) liventalina	1 (fragm.)	Adult
9-1, 56-58	Loxoconcha aff eichwaldi	1 (fragm.)	Adult
	Candona (C.) liventalina	1 (fragm.)	Adult
1, CC	Leptocythere bacuana	1	Juvenile
	Loxoconcha aff eichwaldi	1 (fragm.)	Adult
2, CC	Loxoconcha ornata ornata	2	Juvenile
	Paracandona aff verrucosa	1 (fragm.)	Adult
	Leptocythere bacuana	1	Juvenile
	Loxoconcha aff eichwaldi	1 (fragm.)	Adult
3-1, 92-94	Bacunella dorsoarcuata	2	Adult
	Leptocythere cymbula	1	Juvenile
	Candona (C.) liventalina	2	Adult
4, CC	Loxoconcha aff petasa	3 (fragm.)	Adult, juvenile
	Candona (C.) liventalini	2 (+numerous fragm.)	Adult

Hole 379 A - ContinuedS9-1, 105-107Condons (C) linentifing1AdultCondons ery, ery, Lobat1AdultLoxoconcha cichwaldi2JuvenileS9-3, 83-85Condona (C) graciis1AdultS9, CCCondona (C) graciis2JuvenileLeptocythere declana1JuvenileLeptocythere capaia1JuvenileLeptocythere capaia1JuvenileLoxoconcha cichwaldi1JuvenileLoxoconcha cichwaldi1JuvenileLoxoconcha cichwaldi1JuvenileS54, 84-86Leptocythere bacuana1AdultCandona (C) graciis2Bacunella dorsoarcuata2 (+3 fragm.)JuvenileCandona (C) graciis3Juvenile1JuvenileLoxoconcha ornata ornata1JuvenileCandona (C) graciis3Juvenile1JuvenileCandona (C) graciis3JuvenileLoxoconcha petasa1AdultLoxoconcha petasa1AdultLoxoconcha petasa1AdultCandona (C) graciis3Juvenile40e 3801Juvenile41. CCHeterocythere spin141. CLLeptocythere engeineris241. AdultAdult42. 92-94Heterocythereis spin344. 14-34Heterocythereis spin144. 14-44Heterocythereis spin144. 14-45 <th>Sample (Interval in cm)</th> <th>Species</th> <th>Number of Forms</th> <th>Adult/Juvenile</th>	Sample (Interval in cm)	Species	Number of Forms	Adult/Juvenile
	Hole 379A – Cor	ntinued		
	59-1, 105-107	Candona (C.) liventalina	1	Adult
		Candona sp1 ex gr, lobata	1	Adult
Bacamella dorsoarcatat2Juvenile99.3, 83-85Candona sp. of flectimarginata2Juvenile99, CCCandona (C) gracilis1JuvenileLeptocythere bacanan1JuvenileLeptocythere ergeniensis2AdultLeptocythere ergeniensis1JuvenileLoxaconcha contata ornata3JuvenileLoxaconcha cichwaldi1Juvenile60-4, 36-38Heterocythere is sp.1Juvenile60-4, 36-68Leptocythere bacunan1Adult65-4, 84-86Leptocythere bacunan1Adult65-4, 84-86Leptocythere bacunan1Adult65-4, 84-86Leptocythere bacunan1JuvenileLoxaconcha ornata ornata1JuvenileHole 379B1Juvenile4, CCLeptocythere aff cymbu1JuvenileLoxaconcha ornata1AdultLoxaconcha ornata1JuvenileLoxaconcha ornata1 </td <td></td> <td>Loxoconcha eichwaldi</td> <td>2</td> <td>Juvenile</td>		Loxoconcha eichwaldi	2	Juvenile
$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$		Bacunella dorsoarcuata	2	Juvenile
$ \begin{array}{ccc} Candoma sp. cfr flectimarginata 2 Juvenile 2 Juvenile 2 Juvenile 2 Leptocythere bacuana 1 Juvenile 2 Leptocythere ergeniensis 2 Adult 1 Leptocythere ergeniensis 2 Adult 1 Leptocythere ergeniensis 2 Adult 1 Suvenile 2 Loxoconcha eichvaldi 1 Juvenile 2 Suvenile 4 Control 2 Juvenile 2 Suvenile 4 Control 2 Suvenile 4 Suvenile 4 Control 2 Suvenile 4 Suvenile 4 Control 2 Suvenile 4 S$	59-3, 83-85	Candona (C.) gracilis	1	Adult
99, CCCandona (C) gracilis2JuvenileLeptocythere exercitentis1JuvenileLeptocythere exercitentis2AdultLeptocythere exercitentis1JuvenileLoxoconcha orinta ornata3JuvenileLoxoconcha cichwaldi1JuvenileCandona (C) gracilis2AdultBacunella dorsoarcuata1AdultLeptocythere bacuana1AdultBacunella dorsoarcuata2 (+3 fragm.)AdultLoxoconcha ornata ornata1JuvenileBacunella dorsoarcuata1JuvenileLoxoconcha ornata1JuvenileLoxoconcha ornata1JuvenileLoxoconcha persas1JuvenileLoxoconcha persas1JuvenileLoxoconcha persas1AdultCandona (C) gracilis1JuvenileLoxoconcha persas1AdultLoxoconcha persas1AdultLoxoconcha persas1AdultLoxoconcha persas1AdultLoxoconcha persas1AdultLoyocythere is sp11AdultLoyocythere is sp11AdultLoyocythere is sp11AdultLoyoconcha eichwaldi2AdultLoyoconcha eichwaldi2AdultLoyoconcha eichwaldi2AdultLoyoconcha eichwaldi2JuvenileLoyoconcha eichwaldi2JuvenileLoyoconcha eichwaldi2Juveni		Candona sp3 cfr flectimarginata	2	Juvenile
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	59, CC	Candona (C.) gracilis	2	Juvenile
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		Leptocythere bacuana	1	Juvenile
$\begin{array}{c c} Leptocythere capia \\ Loxoconcha cichwaldi \\ 1 \\ Juvenile \\ Candona (C.) gracilis \\ 2 \\ Adult \\ Adult \\ Loxoconcha ornata ornata \\ 2 \\ (+3 fragm.) \\ Adult \\ Loxoconcha ornata ornata \\ 1 \\ Juvenile \\ Juvenile \\ Juvenile \\ Loxoconcha ornata ornata \\ 1 \\ Juvenile \\ $		Leptocythere ergeniensis	2	Adult
		Leptocythere caspia	1	Juvenile
10-4, 36-38Loweonine Reterocythereis sp Candona (C) gracilis1Juvenine Juvenine $5-4, 84-86$ Leptocythere bacuana1Adult $5-4, 84-86$ Leptocythere bacuana2Adult $5-4, 84-86$ Leptocythere bacuana2(+3 fragm.) $bloeb 3798$ JuvenileJuvenile $candona (C) gracilis3Juvenilebloeb 37981Juvenilecandona (C) gracilis3Juvenilebloeb 37981Juvenilecandona (C) gracilis3Juvenilebloeb 3801Juvenilecandona (C) gracilis1Juvenilecandona (C) gracilis1Adultcandona (C) gracilis2Adultcandona (C) gracilis2Juvenile$		Loxoconcha ornata ornata	3	Juvenile
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0 4 26 20	Loxoconcha elchwalal	1	Juvenile
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	00-4, 30-38	Candona (C) gracific	1	Adult
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		Racunalla dorsoarcuata	1	Adult
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	5-4 84-86	Leptocythere bacuana	1	Adult
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	5-4, 04-00	Candona (C) liventalina	2	Adult
Loxoconcha ornata ornata     1     Juvenile       Loxoconcha ornata ornata     1     Juvenile       Hole 379B     1     Juvenile       A, CC     Leptocythere aff cymbu     1     Juvenile       Gandona (C.) gracilis     3     Juvenile       b, CC     Cypride's sp1     1     Adult       Candona (C.) gracilis     1     Juvenile       Hole 380     1     Adult       -, CC     Heterocythere's sp1     1       Leptocythere basqueti     2     Adult       -2, 92-94     Heterocythere's sp1     1       -4, 41-43     Heterocythere's sp1     1       -3, 52-54     Heterocythere's sp1     1       -1, 103-105     Leptocythere hosqueti     1       Leptocythere andrusovi     1     Adult       Leptocythere sp1     1     Juvenile       -1, 103-105     Leptocythere's sp1     1       Juvenile     2     Juvenile       Leptocythere combula     2     Juvenile       Leptocythere sostata     1     Adult       Loxoconcha eichwaldi     2     Juvenile       Leptocythere combula     2     Juvenile       Leptocythere andrusovi     1     Adult       Leptocythere combula     2     Juvenile </td <td></td> <td>Bacunella dorsoarcuata</td> <td><math>\frac{2}{2}</math> (+3 fragm)</td> <td>Adult</td>		Bacunella dorsoarcuata	$\frac{2}{2}$ (+3 fragm)	Adult
Hole 3798 b, CC Leptocythere aff cymbu 1 Juvenile Candona (C) gracilis 3 Juvenile Condona (C) gracilis 1 Juvenile Loxoconcha petasa 1 Adult Candona (C) gracilis 1 Juvenile tole 380 cC Heterocythereis sp1 1 Adult (2), juvenile Leptocythere ergeniensis 2 Adult Leptocythere is sp1 1 Adult Leptocythere is sp1 1 Adult -2, 92-94 Heterocythereis sp1 1 Adult +2, 52-54 Heterocythereis sp1 1 Juvenile +4, 41-43 Heterocythereis sp1 1 Juvenile -1, 103-105 Leptocythere andrusovi 1 Adult Leptocythere andrusovi 1 Adult Leptocythere is sp1 2 Juvenile -1, 103-105 Leptocythereis sp1 3 Juvenile Leptocythere is sp1 3 Juvenile Leptocythere is sp1 4 Adult Leptocythere andrusovi 1 Adult Leptocythere andrusovi 1 Adult Leptocythere andrusovi 1 Adult Loxoconcha eichwaldi 2 Juvenile Leptocythere andrusovi 2 Juvenile Leptocythere andrusovi 2 Juvenile Leptocythere is sp1 1 Juvenile Leptocythere is sp1 1 Juvenile Leptocythere is sp1 1 Juvenile Leptocythere andrusovi 3 Adult Leptocythere andrusovi 4 Adult Leptocythere andrusovi 4 Adult Leptocythere andrusovi 4 Adult Leptocythere andrusovi 4 Adult Leptocythere is sp1 1 Juvenile Leptocythere is sp1 1 Juvenile Leptocythere noticuta 1 Adult Leptocythere noticuta 2 Juvenile Leptocythere noticuta 2 Juvenile Leptocythere mostrata 2 Adult Loxoconcha eichwaldi 2 Juvenile Leptocythere multituberculata 1 Adult Leptocythere multituberculata 3 Juvenile Hemicytherura sp1 Juvenile Adult (1), juvenile Meticythere cymbula 3 Juvenile Leptocythere cymbula 1 Juvenile Leptocythere cymbula 3 Juvenile Leptocythere cymbula 1 Juvenile Leptocythere cymbula		Loxoconcha ornata ornata	1	Juvenile
b, CCLeptocythere aff cymbu1Juvenile5, CCCyprideis $\mathfrak{sp}_1$ 1JuvenileLoxoconcha petasa1AdultCandona (C) gracilis1JuvenileLoxoconcha petasa1AdultCandona (C) gracilis1JuvenileHole 3801Juvenile4, CCHeterocythere $\mathfrak{sp}_1$ 11Adult (2), juvenileLeptocythere bosqueti2Adult2, 92-94Heterocythere $\mathfrak{sp}_1$ 3Juvenile+3, 52-54Heterocythere $\mathfrak{sp}_1$ 1Adult+3, 52-54Heterocythere $\mathfrak{sp}_1$ 1Adult+4, 41-43Heterocythere $\mathfrak{sp}_1$ 1AdultLeptocythere bosqueti1AdultLeptocythere bosqueti1AdultLeptocythere andrusovi1AdultLeptocythere oxplant1JuvenileLeptocythere angia1AdultLeptocythere aspia1AdultLeptocythere aspia1AdultLeptocythere aspia1AdultLeptocythere aspia1AdultLeptocythere aspia1AdultLeptocythere aspia1AdultLeptocythere angia1AdultLeptocythere angia1AdultLeptocythere angia1AdultLeptocythere angia1AdultLeptocythere angia1AdultLeptocythere angia1AdultLeptocythere angia1Adult<	Hole 379B			
t. C.Leptocythere all cymbu1JuvenileCandona (C)gracilis3Juvenileb, CCCypidie's $\mathfrak{sp}_1$ 1JuvenileLoxoconcha petasa1AdultCandona (C)gracilis1Hole 380JuvenileJuvenilet, CCHeterocythere spi11Leptocythere ergeniensis2AdultL2, 92-94Heterocythereis $\mathfrak{sp}_1$ 1L4, 41-43Heterocythereis $\mathfrak{sp}_1$ 1L4, 41-43Heterocythereis $\mathfrak{sp}_1$ 1L4, 41-43Heterocythereis $\mathfrak{sp}_1$ 1Leptocythere bosqueti1AdultLeptocythere andrissovi1AdultLeptocythere andrissovi1AdultLeptocythere andrissovi1AdultLeptocythere concha eichwaldi2AdultLeptocythere concha eichwaldi2JuvenileLeptocythere constrata1AdultLeptocythere constrata2JuvenileLeptocythere constrata2JuvenileLoxoconcha eichwaldi2JuvenileLoxoconcha eichwaldi2JuvenileLoxoconcha eichwaldi2JuvenileLoxoconcha eichwaldi2JuvenileLoxoconcha eichwaldi2JuvenileLoxoconcha eichwaldi2JuvenileLoxoconcha eichwaldi3JuvenileLoxoconcha eichwaldi3JuvenileS4, 88-60Loxoconcha eichwaldi3JuvenileHeterocy		1		Lunar II.
$\begin{array}{c c} cnucha \ (c.) \ gractus & 5 \\ c C \ C \ Dynitic \ sp_1 & 1 \\ Loxoconcha \ petasa & 1 \\ Candona \ (C.) \ gracilis \ 1 \\ \end{array}$	i, CC	Candona (C) amoilia	1	Juvenile
$ \begin{array}{ccccccc} C & Cyprates sp_1 & 1 & Adult \\ Loxoconcha petasa & 1 & Adult \\ Candona (C) gracilis & 1 & Juvenile \\ \end{array} \\ \hline \\ \begin{array}{c} Loton (C) & Gamma (C) gracilis & 1 & Juvenile \\ \hline \\ \begin{array}{c} Leptocythere ergeniensis & 2 & Adult \\ Leptocythere bosqueti & 2 & Adult \\ Leptocythere bosqueti & 2 & Adult \\ \hline \\ \begin{array}{c} Leptocythere sp_1 & 1 & Adult \\ Leptocythere sp_1 & 1 & Juvenile \\ \hline \\ \begin{array}{c} Leptocythere sp_1 & 1 & Juvenile \\ \hline \\ \begin{array}{c} Leptocythere andrusovi & 1 & Adult \\ Leptocythere andrusovi & 1 & Adult \\ Leptocythere sp_1 & 1 & Juvenile \\ \hline \\ \begin{array}{c} Leptocythere andrusovi & 1 & Adult \\ Leptocythere sp_1 & 1 & Juvenile \\ \hline \\ \begin{array}{c} Leptocythere nostrata & 1 & Adult \\ Leptocythere caspia & 1 & Adult \\ Loxoconcha elongata & 2 & Adult \\ Loxoconcha elongata & 2 & Juvenile \\ Loxoconcha elongata & 2 & Juvenile \\ \hline \\ \begin{array}{c} Leptocythere multituberculata & 1 & Adult \\ Leptocythere multituberculata & 1 & Adult \\ Leptocythere multituberculata & 1 & Juvenile \\ \hline \\ \begin{array}{c} Leptocythere multituberculata & 1 & Adult \\ Leptocythere multituberculata & 3 & Juvenile \\ \hline \\ \begin{array}{c} Loxoconcha elongato & 2 & Adult \\ Leptocythere cymbula & 3 & Juvenile \\ \hline \\ \begin{array}{c} Leptocythere cymbula & 3 & Juvenile \\ \hline \\ \begin{array}{c} Leptocythere cymbula & 3 & Juvenile \\ Leptocythere cymbula & 3 & Juvenile \\ \hline \\ \begin{array}{c} Leptocythere cymbula & 3 & Juvenile \\ Leptocythere cymbula & 3 & Juvenile \\ Loxoconcha elongato & 2 & Juvenile \\ \end{array} \\ \begin{array}{c} Leptocythere cymbula & 3 & Juvenile \\ Leptocythere cymbula & 3 & Juvenile \\ Loxoconcha elongato & 2 & Juvenile \\ \end{array} \\ \end{array} \\ \begin{array}{c} Leptocythere cymbula & 3 & Juvenile \\$		Candona (C.) gracilis	3	Juvenile
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	, cc	<i>Cypridels</i> sp <sub>1</sub>	1	A dult
Hole 3804, CCHeterocythere is $sp_1$ 11Adult (2), juvenileLeptocythere osqueti2AdultL2, 92-94Heterocythere is $sp_1$ 1L3, 52-54Heterocythere is $sp_1$ 3L4, 41-43Heterocythere is $sp_1$ 1Leptocythere andrusovi1Leptocythere andrusovi1Leptocythere andrusovi1Leptocythere andrusovi1Leptocythere andrusovi1Leptocythere caspia1Leptocythere caspia1Leptocythere caspia1Leptocythere caspia1Leptocythere caspia1Leptocythere caspia1Leptocythere caspia1Leptocythere caspia1Leptocythere caspia1Lowconcha eichwaldi2Juvenile2Lowconcha eichwaldi2Lowconcha eichwaldi2Lowconcha eichwaldi2Lowconcha eichwaldi2Juvenile3Lowconcha eichwaldi2Lowconcha eichwaldi2Luvenile3Lowconcha eichwaldi2Leptocythere cymbula3Leptocythere cymbula3Lowconcha eichwaldi2Leptocythere cymbula3Lowconcha eichwaldi3Lowconcha chekaldi3Lowconcha chekaldi3Lowconcha chekaldi3Lowconcha eichwaldi3Lowconcha eichwaldi3Lowconcha eic		Candona (C.) gracilis	1	Juvenile
ActionHeterocythere is $sp_1$ 11Adult (2), juvenileLeptocythere ergeniensis2AdultLeptocythere bosqueti2Adult+2, 92-94Heterocythereis $sp_1$ 1-3, 52-54Heterocythereis $sp_1$ 3-4, 41-43Heterocythereis $sp_1$ 1Leptocythere andrusovi1Leptocythere bosqueti1AdultAdultLeptocythere contraction1Leptocythere is $sp_1$ 1Leptocythere is $sp_1$ 1Leptocythere contraction1Leptocythere contraction1Leptocythere contraction1Leptocythere contraction2Leptocythere contraction2Leptocythere contraction2Leptocythere contraction2Leptocythere contraction2Leptocythere contraction2Leptocythere contraction2Leptocythere contraction2Leptocythere nostrata2Leptocythere nostrata2Leptocythere nostrata2Leptocythere nostrata2Loxoconcha eichwaldi2Loxoconcha eichwaldi2Loxoconcha eichwaldi2Leptocythere multituberculata1Leptocythere cymbula3JuvenileLoxoconcha schweyeri4AdultLoxoconcha eichwaldi2Loxoconcha eichwaldi3Loxoconcha eichwaldi3Leptocythere cymbula3Loxocon	Hole 380			
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	L CC	Heterocythereis sp1	11	Adult (2), juvenile
Leptocythere bosqueti2Adult $4+2, 92-94$ Heterocythereis $sp_1$ 1Adult $4+2, 52-54$ Heterocythereis $sp_1$ 3Juvenile $4+3, 52-54$ Heterocythereis $sp_1$ 1Juvenile $5+1, 103-105$ Leptocythere andrussovi1AdultLeptocythere bosqueti1AdultLoxoconcha eichwaldi2AdultLeptocythere caspia1JuvenileLeptocythere caspia1AdultLeptocythere caspia1AdultLeptocythere caspia1AdultLeptocythere caspia1AdultLeptocythere caspia1AdultBacunella dorsoarcuata2JuvenileCandona [C.] gracilis4Adult (1), juvenile5-1, 133-135Candona elongata2Adult + juvenileLoxoconcha petasa2Adult + juvenileLoxoconcha eichwaldi2Juvenile8-1, 87-89Loxoconcha eichwaldi2Juvenile8-3, 82-84Loxoconcha eichwaldi2Juvenile35-4, 58-60Loxoconcha eichwaldi2Juvenile35-4, 58-60Loxoconcha eichwaldi3Juvenile40, CCBacunella dorsoarcuata2Adult40, CCBacunella dorsoarcuata2Adult40, CCLoxoconcha ornata ornata3Juvenile40, CCLoxoconcha ornata ornata3Juvenile40, CCLoxoconcha ornata ornata3Juvenile41, 53		Leptocythere ergeniensis	2	Adult
$\begin{array}{ccccccc} +2, 92-94 & Heterocythereis $ \mathfrak{sp}_1 & 1 & Adult \\ +3, 52-54 & Heterocythereis $ \mathfrak{sp}_1 & 1 & Juvenile \\ +4, 41-43 & Heterocythereis $ \mathfrak{sp}_1 & 1 & Juvenile \\ 5-1, 103-105 & Leptocythere andrusovi & 1 & Adult \\ Leptocythere andrusovi & 1 & Adult \\ Leptocythere bosqueti & 1 & Adult \\ Leptocythere is $ \mathfrak{sp}_1 & 1 & Juvenile \\ Leptocythere is $ \mathfrak{sp}_1 & 1 & Juvenile \\ Leptocythere carpia & 2 & Juvenile \\ Leptocythere onstrata & 1 & Adult \\ Bacunella dorsoarcuata & 2 & Juvenile \\ Candona (C) gracilis & 4 & Adult (1), juvenile \\ Loxoconcha eichwaldi & 2 & Juvenile \\ Loxoconcha eichwaldi & 2 & Juvenile \\ Candona (C) gracilis & 4 & Adult + juvenile \\ Loxoconcha eichwaldi & 2 & Juvenile \\ Leptocythere multituberculata & 1 & Juvenile \\ Hemicytherura $ \mathfrak{sp}_1 & 1 & Juvenile \\ Hemicytherura $ \mathfrak{sp}_1 & 1 & Juvenile \\ Leptocythere multituberculata & 1 & Adult \\ Loxoconcha eichwaldi & 2 & Juvenile \\ Hemicytherura $ \mathfrak{sp}_1 & 1 & Juvenile \\ Hemicytherura $ \mathfrak{sp}_1 & 1 & Juvenile \\ Leptocythere multituberculata & 1 & Adult \\ Leptocythere cymbula & 3 & Juvenile \\ Motericythere $ \mathfrak{sp}_1 & 1 & Juvenile \\ \mathcal{S}5-4, $ 8-60 & Loxoconcha schweyeri & 4 & Adult (1), juvenile \\ \mathcal{S}7-2, 46-48 & numerous $ fragments of $ Candona genus \\ \mathcal{H}0, CC & Bacunella dorsoarcuata & 2 & Adult \\ Loxoconcha eichwaldi & 3 & Adult (2), juvenile \\ \mathcal{S}7-3, 88-90 & Loxoconcha ornata ornata & 3 & Juvenile \\ Leptocythere cymbula & 1 & Juvenile \\ Loxoconcha eichwaldi & 2 & Juvenile \\ Loxoconcha eichwaldi & 2 & Juvenile \\ Loxoconcha eichwaldi & 2 & Juvenile \\ Loxoconcha ornata ornata & 2 & Juvenile \\ Lovenile & Juvenile & Juvenile \\ Loxoconcha ornata ornata & 2 & Juvenile \\ Lovenile & Juvenile & Juvenile \\ Loxoconcha ornata ornata & 2 & Juvenile \\ Lovenile & Juvenile & Juvenile \\ Loxoconcha ornata ornata & 2 & Juvenile \\ Loxoconcha ornata ornata & 2 & Juvenile \\ Loxoconcha ornata ornata &$		Leptocythere bosqueti	2	Adult
$\begin{array}{cccccc} +3, 52-54 & Heterocythere is $p_1 & 3 & Juvenile \\ +4, 41-43 & Heterocythere is $p_1 & 1 & Juvenile \\ +4, 41-43 & Heterocythere is $p_1 & 1 & Adult \\ Juvenile & Juvenile \\ Leptocythere bosqueti & 1 & Adult \\ Leptocythere bosqueti & 2 & Juvenile \\ Leptocythere cymbula & 2 & Juvenile \\ Leptocythere caspia & 1 & Adult \\ Leptocythere caspia & 1 & Adult \\ Bacunella dorsoarcuata & 2 & Juvenile \\ Candona (C.) gracilis & 4 & Adult (1), juvenile \\ Loxoconcha eichwaldi & 2 & Juvenile \\ Loxoconcha eichwaldi & 2 & Juvenile \\ Candona (C.) gracilis & 4 & Adult (1), juvenile \\ Loxoconcha eichwaldi & 2 & Juvenile \\ Hemicytherua sp_1 & 1 & Juvenile \\ Leptocythere multituberculata & 1 & Adult \\ Leptocythere multituberculata & 1 & Adult \\ Leptocythere multituberculata & 1 & Juvenile \\ Juvenile & Juvenile & Juvenile \\ Hemicytherua sp_1 & 1 & Juvenile \\ Leptocythere cymbula & 3 & Juvenile \\ Moter & Loxoconcha schweyeri & 4 & Adult (1), juvenile \\ Moter & Loxoconcha eichwaldi & 2 & Juvenile \\ Juvenile & Juvenile & Juvenile \\ Joxoconcha eichwaldi & 2 & Juvenile \\ Loxoconcha eichwaldi & 3 & Adult (1), juvenile \\ Joxoconcha eichwaldi & 3 & Adult (1), juvenile \\ Joxoconcha eichwaldi & 3 & Adult (2), juvenile \\ Loxoconcha eichwaldi & 3 & Juvenile \\ Loxoconcha eichwaldi & 2 & Juvenile \\ Loxoconcha eichwaldi & 3 & Juvenile \\ Loxoconcha eichwaldi & 3 & Juvenile \\ Loxoconcha eichwaldi & 2 & Juvenile \\ Loxoconcha eichwaldi & 3 & Juvenile \\ Loxoconcha eichwaldi & 3 & Juvenile \\ Loxoconcha eichwaldi & 2 & Juven$	1-2, 92-94	Heterocythereis sp <sub>1</sub>	1	Adult
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Leptocythere bosqueti 1 Adult Adult Loxoconcha eichwaldi 2 Adult  Heterocythereis sp1 1 Juvenile  Leptocythere caspia 2 Juvenile  Leptocythere caspia 1 Adult  Leptocythere nostrata 1 Adult  Bacunella dorsoarcuata 2 Juvenile  Candona (C.) gracilis 4 Adult (1), juvenile  Candona elongata 2 Adult + juvenile  Loxoconcha eichwaldi 2 Juvenile  Loxoconcha eichwaldi 2 Juvenile  Leptocythere cymbula 3 Juvenile  Leptocythere cymbula 3 Juvenile  St-1, 87-89 Loxoconcha eichwaldi 2 Juvenile  Leptocythere cymbula 3 Juvenile  Leptocythere cymbula 3 Juvenile  Korcc Bacunella dorsoarcuata 2 Adult (1), juvenile  Loxoconcha eichwaldi 2 Juvenile  Leptocythere cymbula 3 Juvenile  Leptocythere cymbula 3 Juvenile  Loxoconcha eichwaldi 2 Juvenile  Leptocythere cymbula 3 Juvenile  Korcc Bacunella dorsoarcuata 2 Adult (1), juvenile  Loxoconcha eichwaldi 2 Juvenile  Loxoconcha eichwaldi 2 Juvenile  Leptocythere cymbula 3 Juvenile  Korc Loxoconcha ornata ornata 3 Adult (2), juvenile  Loxoconcha eichwaldi 3 Luvenile  Loxoconcha ornata ornata 2 Juvenile  Loxoconcha ornata ornat	5-1, 103-105	Leptocythere and rusovi	1	Adult
$ \begin{array}{c cccccc} Loxoconcha eichwaldi & 2 & Adult \\ Heterocythere is sp_1 & 1 & Juvenile \\ Leptocythere cymbula & 2 & Juvenile \\ Leptocythere caspia & 1 & Adult \\ Leptocythere nostrata & 1 & Adult \\ Bacunella dorsoarcuata & 2 & Juvenile \\ Candona (C.) gracilis & 4 & Adult (1), juvenile \\ Candona (C.) gracilis & 4 & Adult (1), juvenile \\ Loxoconcha petasa & 2 & Adult \\ Loxoconcha eichwaldi & 2 & Juvenile \\ Loxoconcha eichwaldi & 2 & Juvenile \\ Hemicythere and the function of t$		Leptocythere bosqueti	1	Adult
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$\begin{array}{cccccccccccccccccccccccccccccccccccc$		Candona (C) ana cilia	2	Adult (1) invenile
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bit Normedia2Juvenile $bit Normedia2Juvenilebit Normedia2Juvenilebit Normedia1Juvenilebit Normedia1Juvenilebit Normedia1Juvenilebit Normedia1Juvenilebit Normedia1Juvenilebit Normedia1Juvenilebit Normedia1Juvenilebit Normedia2Juvenilebit Normedia2Juvenilebit Normedia2Juvenilebit Normedia2Juvenilebit Normedia2Juvenilebit Normedia2Adult (1), juvenilebit Normedia2Adultbit Normedia2Adultbit Normedia3Adult (2), juvenilebit Normedia3Adult (2), juvenilebit Normedia1Juvenilebit Normedia1Juvenilebit Normedia1Juvenilebit Normedia2Juvenilebit Normedia2$		Loxoconcha eichwaldi	2	Juvenile
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Leptocythere multituberculata       1       Adult         Leptocythere cymbula       3       Juvenile         35-4, 58-60       Loxoconcha eichwaldi       2       Juvenile         36-3, 82-84       Loxoconcha schweyeri       4       Adult (1), juvenile         37-2, 46-48       numerous fragments of Candona genus       4       Adult         40, CC       Bacunella dorsoarcuata       2       Adult         Loxoconcha eichwaldi       3       Adult (2), juvenile         Hole 380A       Juvenile       1       Juvenile         6, CC       Loxoconcha ornata ornata       3       Juvenile         6-3, 88-90       Loxoconcha eichwaldi       2       Juvenile         6-3, 88-90       Loxoconcha ornata ornata       2       Juvenile         6, CC       Loxoconcha ornata ornata       2       Juvenile         6-3, 88-90       Loxoconcha ornata ornata       2       Juvenile         6, CC       Loxoconcha ornata ornata       2       Juvenile         6, CC       Loxoconcha ornata ornata       2       Juvenile         6, CC       Loxoconcha ornata ornata       2       Juvenile	1,0702	Hemicytherura sp.	1	Iuvenile
Leptocythere cymbula       3       Juvenile         35-4, 58-60       Loxoconcha eichwaldi       2       Juvenile         36-3, 82-84       Loxoconcha schweyeri       4       Adult (1), juvenile         37-2, 46-48       numerous fragments of Candona genus       4       Adult (1), juvenile         40, CC       Bacunella dorsoarcuata       2       Adult         Loxoconcha eichwaldi       3       Adult (2), juvenile         Hole 380A         6, CC       Loxoconcha ornata ornata       3       Juvenile         1-3, 88-90       Loxoconcha eichwaldi       2       Juvenile         1-3, 88-90       Loxoconcha ornata ornata       2       Juvenile         2, CC       Loxoconcha ornata ornata       2       Juvenile		Leptocythere multituberculata	î	Adult
35-4, 58-60       Loxoconcha eichwaldi       2       Juvenile         36-3, 82-84       Loxoconcha schweyeri       4       Adult (1), juvenile         37-2, 46-48       numerous fragments of Candona genus       4       Adult (1), juvenile         40, CC       Bacunella dorsoarcuata       2       Adult         Loxoconcha eichwaldi       3       Adult (2), juvenile         Hole 380A         6, CC       Loxoconcha ornata ornata       3         Leptocythere cymbula       1       Juvenile         1-3, 88-90       Loxoconcha eichwaldi       2         Loxoconcha ornata ornata       2       Juvenile         0, CC       Loxoconcha ornata ornata       3         0, CC       Loxoconcha ornata ornata       2		Leptocythere cymbula	3	Juvenile
36-3, 82-84       Loxoconcha schweyeri       4       Adult (1), juvenile         87-2, 46-48       numerous fragments of Candona genus       2       Adult         80, CC       Bacunella dorsoarcuata       2       Adult         Loxoconcha eichwaldi       3       Adult (2), juvenile         Hole 380A       Juvenile       1       Juvenile         6, CC       Loxoconcha ornata ornata       3       Juvenile         1-3, 88-90       Loxoconcha eichwaldi       2       Juvenile         2, CC       Loxoconcha ornata ornata       2       Juvenile         2, CC       Loxoconcha ornata ornata       2       Juvenile         2, CC       Loxoconcha ornata ornata       2       Juvenile	35-4, 58-60	Loxoconcha eichwaldi	2	Juvenile
37-2, 46-48       numerous fragments of Candona genus         40, CC       Bacunella dorsoarcuata       2       Adult         Loxoconcha eichwaldi       3       Adult (2), juvenile         Hole 380A       Invenile       1       Juvenile         -3, 88-90       Loxoconcha ornata ornata       2       Juvenile         Loxoconcha ornata ornata       2       Juvenile         CC       Loxoconcha eichwaldi       2       Juvenile         -3, 88-90       Loxoconcha ornata ornata       2       Juvenile         Loxoconcha ornata ornata       2       Juvenile       Juvenile         CC       Loxoconcha ornata ornata       2       Juvenile         CC       Loxoconcha ornata ornata       2       Juvenile	6-3, 82-84	Loxoconcha schweyeri	4	Adult (1), juvenile
40, CC       Bacunella dorsoarcuata Loxoconcha eichwaldi       2       Adult 3         Hole 380A       Adult (2), juvenile         40, CC       Loxoconcha ornata ornata Leptocythere cymbula       3       Juvenile         1-3, 88-90       Loxoconcha ornata ornata Loxoconcha ornata ornata       2       Juvenile         2, CC       Loxoconcha ornata ornata       2       Juvenile         2, CC       Loxoconcha ornata ornata       2       Juvenile         2, CC       Loxoconcha ornata ornata       2       Juvenile	7-2, 46-48	numerous fragments of Candona genus		
Loxoconcha eichwaldi3Adult (2), juvenileHole 380A6, CCLoxoconcha ornata ornata3Juvenile1-3, 88-90Loxoconcha eichwaldi2JuvenileLoxoconcha ornata ornata2Juvenile0, CCLoxoconcha ornata ornata2Juvenile0, CCLoxoconcha ornata ornata2Juvenile	10, CC	Bacunella dorsoarcuata	2	Adult
Hole 380A       Juvenile         4, CC       Loxoconcha ornata ornata       3       Juvenile         1       Juvenile       1       Juvenile         1-3, 88-90       Loxoconcha eichwaldi       2       Juvenile         1, CC       Loxoconcha ornata ornata       2       Juvenile         1, CC       Loxoconcha ornata ornata       2       Juvenile		Loxoconcha eichwaldi	3	Adult (2), juvenile
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-3, 88-90Loxoconcha eichwaldi2JuvenileLoxoconcha ornata ornata2JuvenileO, CCLoxoconcha ornata ornata2Juvenile		Leptocythere cymbula	1	Juvenile
Loxoconcha ornata ornata 2 Juvenile , CC Loxoconcha ornata ornata 2 Juvenile	-3, 88-90	Loxoconcha eichwaldi	2	Juvenile
Loxoconcha ornata ornata 2 Juvenile		Loxoconcha ornata ornata	2	Juvenile
In the second	, cc	Loxoconcha ornata ornata	2	Juvenile

**APPENDIX** – Continued

## **APPENDIX** – Continued

Sample (Interval in cm)	Species	Number of Forms	Adult/Juvenile
Hole 380A - Co	ntinued		
11-2 38-40	I entocythere cashia	2	Adult
11-2, 50-40	Loroconcha ornata ornata	6	Adult(4) invenile
	Candona (C) liventalini	3	Adult
13 CC	Unidentified fragments of Candona genus	5	Adult
14.2 99.101	Candona (C) gracilie	2	Iuvenile
1+2, 99-101	Candona sp. ex ar Jabiata	1	Adult
14-6 85-87	Candona (C) gracilis	2	Iuvenile
14 CC	Candona (C.) gracilis	3	Juvenile
19,00	Candona (C.) gracilis	2	Juvenile
15,00	Candona (C.) off labiata	2	Iuvenile
23-3	Unidentified fragments	2	suvenile
23-4 66-68	Candona (C) sp. ex ar lobata	6	Adult (+numerous fragm)
254,0000	Candona (C.) sp. cx gl. tobata	2	Adult
23 CC	Unidentified fragments	2	Adult
26, CC	Unidentified fragments		
28,00	Candona (C) haleanica	4	Adult
20, 00	Candona (C.) sp. ex ar lobata	3	Adult
32 CC	Candona (C) sp. ex gr. lobata	3	Adult
52, 00	Loxoconcha ormata ormata	1	Invenile
21 CC	Unidentified freements	2	Juvenine
51, CC	Unidentified fragments		
80, CC	Undentified fragments		
Site 381			
1-1 62-64	I oroconcha schweveri	1	Adult
1-1, 02-04	Loxoconcha eichwaldi	1	Juvenile
2-1 72-74	Hatarooutharais sp	2	Invenile
2-1, 72-74	Candona (c) balcanica	1	Juvenile
	Candona (C) gracilis	3	Iuvenile
2 CC	Lentoevthere cymbula	2	Juvenile
2,00	Candona (C) gracilis	1	Juvenile
	Candona elongate	2	Juvenile
3 CC	Candona (C) balcanica	2	Adult
5, 00	Candona (C.) parcellis	4	Juvenile
	Candona elongata	1	Invenile
	Lentocythere cymbula	1	Adult
4-2 82-84	Leptocythere ergeniensis	1	Adult
4 CC	Candona (C) gracilis	3	Adult
1,00	Candona elongata	4	Adult (1) iuvenile
	Cytherissa hogat schovi	1	Juvenile
	Lentocythere cymhula	2	Adult
5-2 82-84	Candona (C) gracilis	3	Juvenile
5-4 72-74	Candona (C) liventalini	3	Adult
5-4, 72-74	Candona (C.) halcanica	3	Juvenile
	Candona (Pontonialla) of schemachansis	1	Adult
	Candona (C) gracilis	2	Adult
5 00	Lantoouthere multituberoulate	2	Juvenile
5, 00	Candona (C) gracilia	2	Juvenile
6.2 72.71	Paqualla dorsogranata	2	Juvenile
0-2, 12-14	Lovosoncha ornata ornata	1	Juvenile
	Candona (C) liventalina	1	A dult
6.00	Lava som cha sishuseldi	1	Adult
o, CC	Condona (C) masilia	1	Juvenile
	Canaona (C.) gracius	3	Adult (1), juvenile
	Loxoconcha ornata ornata	2	Juvenile
	Candona (C.) Inventalina	1	Adult
	Canaona (C.) balcanica	1	Adult
7 2 7 2 7 4	Bacunella aorsoarcuata	1	Juvenile
1-3, 12-14	Leptocythere multituberculata	1	Juvenile
	Leptocythere ergeniensis	1	Juvenile
	Candona (C.) gracilis	2	Juvenile
	Candona (Caspiocypris) filona	1	Adult
0.1.70.71	Bacunella dorsoarcuata	1	Adult
8-1, 72-74	Paracandona aff verrucosa	1	Adult
	Candona (C.) liventalina	4	Adult (2), juvenile

## **APPENDIX** – Continued

Sample (Interval in cm)	Species	Number of Forms	Adult/Juvenile
Site 381 - Con	tinued		
	Candona (Pontoniella) sn.	1	Juvenile
	Bacunella dorsoarcuata	4	Adult (1), juvenile
	Loxoconcha ornata ornata	3	Juvenile
	Leptocythere striatocostata	1	Adult
8-3, 72-74	Candona (C.) liventalina	3	Adult
	Bacunella dorsoarcuata	3	Adult
8-5, 82-84	Candona (C.) liventalina	4	Adult
	Candona (C.) gracilis	3	Juvenile
	Candona (Caspiocypris) filona	2	Adult (2)
	Candona confragosa	1	Adult
9-1 94-96	Candona (C) liventalina	4	Adult
J-1, J+-J0	Candona (C.) halcanica	2	Adult
	Candona (Pontoniella) sp	2	Adult
	Leptocythere ergeniensis	3	Adult
	Leptocythere andrusovi	2	Adult
	Leptocythere striatocostata	2	Adult
	Leptocythere bacuana	1	Juvenile
	Leptocythere caspia	1	Adult
	Bacunella dorsoarcuata	2	Juvenile
	Heterocythereis sp <sub>1</sub>	2	Juvenile
	Loxoconcha eichwaldi	4	Juvenile
	Loxoconcha petasa	1	Adult
9-5, 77-79	Candona (C.) liventalina	4	Adult
	Candona (C.) gracilis	1	Juvenile
	Leptocythere bacuana	. 1	Juvenile
10.00	Loxoconcha ornata ornata	2	Juvenile
13, CC	Candona (C) liventalina	5	Adult
15, 00	Candona (C.) gracilis	8	Juvenile
	Bacunella dorsoarcuata	3	Juvenile
	Candona sp. ex gr. flectimarginata	1	Adult
14, CC	Candona (C.) gracilis	1	Juvenile
	Candona (C.) liventalina	3	Juvenile
15-6, 92-94	Candona (C.) liventalini	1	Juvenile
	Candona sp1 cf. lobata	1	Adult (?)
15, CC	Candona sp3	1	Adult
	Candona (C.) liventalina	3	Adult
	Candona (C.) gracilis	7	Juvenile
	Candona (P.) acuminata striata	2	Adult
	Candona (C.) balcanica	2	Adult
	Paracandona all vernacosa Paramella dorsogramata	7	Juvenile
16-4 72-74	Candona (C) liventalina	3	Iuvenile
104, 72-74	Candona (C) gracilis	3	Juvenile
	Bacunella dorsoarcuata	3	Juvenile
16-5, 74-76	Candona (C.) liventalina	2	Adult
	Loxoconcha ornata ornata	1	Juvenile
17-3, 72-74	Candona (P.) schemachensis	1	Adult
	Candona (P.) acuminata striata	4	Adult
	Candona sp2cf. labiata	1	Adult
	Leptocythere bosqueti	3	Adult
	Loxoconcha petasa	1	Adult
	Loxoconcha eichwaldi	2	Adult
17, CC	Candona (P.) acuminata striata	2	Adult
	Loxoconcha ornata ornata	1	Adult
	Loxoconcha petasa	3	Adult (2), juvenile
	Bacunella aorsoarcuata	2	Juvenile
18-2 52.54	Candona (C) balagnia	2	Adult
18-5, 72-34	Candona sp. of Jabiata	1	Adult
18 CC	Candona sp2 cf. labiata	3	Adult
10, 00	Candona (C) liventalina	1	Invenile
19-1, 72-74	Candona (C.) liventalina	1	Adult
	Bacunella dorsoarcuata	î	Adult
30 CC	Unidentified fragments		25 (25 (25 (25 (25 (25 (25 (25 (25 (25 (

- Figure 1 Candona (Caspiocypris) filona Livental—exterior lateral view of right valve.
- Figure 2 Candona sp<sub>3</sub> ex gr. nonreticulata Sokac—exterior lateral view of left juvenile valve.
- Figure 3 Candona sp<sub>2</sub> ex gr. labiata (Zalanyi)—exterior lateral view of right valve.
- Figure 4 Candona sp<sub>3</sub> ex gr. lobata (Zalanyi)—exterior lateral view of right valve.
- Figure 5 Candona (Caspiocypris) elongata (Svejer)—exterior lateral view of left valve.
- Figure 6 Candona (Camptocypria) balcanica (Zalanyi)—exterior lateral view of left juvenile valve.
- Figure 7 Candona (Caspiolla) liventalina (Evlachova)—exterior lateral view of left valve.
- Figure 8 Candona (Caspiolla) gracilis (Livental)—exterior later view of female right valve.
- Figure 9 Candona (Caspiolla) gracilis (Livental)—exterior later view of male right valve.

(see p. 1026)

## PLATE 2

Figure 1	Candona (Caspiolla) gracilis (Livental)—interior lateral view of female right valve.
Figure 2	Candona (C.) gracilis (Livental)—interior lateral view of juvenile right valve (larval stage 6).
Figure 3	Idem—larval stage 5.
Figure 4	Candona (Caspiocypris) elongata (Svejer)-interior lateral view of left valve.
Figure 5	Hemicytherura spi-interior lateral view of right valve.
Figure 6	Candona (Caspiolla) ex gr. flectimarginata Sokac—interior lateral view of right valve.
Figure 7	Candona (Caspiolla) liventalina (Evlachova)—interior lateral view of left valve.
Figure 8	Candona sp <sub>3</sub> ex gr. nonreticulata Sokac—interior lateral view of left valve.

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OSTRACODA



Figure 1	Paracandona a	ff. verrucosa	(Stanceva)	)—interior
	lateral view of	right valve.		

- Figure 2 Paracandona aff. verrucosa (Stanceva)—dorsal view.
- Figures 3, 4, 6 Candona (Pontoniella) acuminata striata Mandelstam—exterior lateral view of different morphotype.
- Figures 5,7 Candona (Pontoniella) acuminata striata Mandelstam—interior lateral view of different morphotype.

## PLATE 4

Figure 1	Leptocythere ergeniensis (Svejer)-exterior lateral view of left valve.
Figure 2	Leptocythere bosqueti (Livental)-exterior lateral view of left valve.
Figure 3	Leptocythere aff. nostrata (Livental)-exterior lateral view of left valve.
Figure 4	Leptocythere aff. caspia (Livental)-exterior lateral view of left valve.
Figure 5	Leptocythere adrusovi (Livental)-interior lateral view of right valve.
Figure 6	Leptocythere bosqueti (Livental)-interior lateral view of left valve.
Figure 7	Leptocythere striatocostata (Svejer)-exterior lateral view of right valve.
Figure 8	Leptocythere aff. cymbula (Livental)-exterior lateral view of right valve.

(see p. 1030)





PLATE 5

Figure 1	Leptocythere bacuana (Livental)—exterior lateral view of juvenile left valve.
Figure 2	Leptocythere aff. cymbula (Livental)-interior lateral view of right valve.
Figure 3	Leptocythere ergeniensis (Svejer)—interior lateral view of right valve.
Figure 4	Callistocythere cf. diffusa (G.W. Müller)—interior lateral view of left valve.
Figure 5	Cytherissa bogatschovi plana Klein-interior lateral view of right valve.
Figure 6	Loxoconcha eichwaldi Livental—interior lateral view of right valve.
Figure 7	Idem-interior lateral view of juvenile right valve.
Figure 8	Loxoconcha petasa Livental — interior lateral view of left valve.

(see p. 1032)

## PLATE 6

Figure 1	Cytherissa bogatschovi plana Klein—exterior lateral view of right valve.
Figure 2	Candona (Caspiolla) ex gr. flectimarginata Sokac—exterior lateral view of right valve.
Figure 3	Bacunella dorsoarcuata (Zalanyi)—exterior lateral view of left valve.
Figure 4	Bacunella dorsoarcuata (Zalanyi)-dorsal view.
Figure 5	Heterocythereis sp <sub>1</sub> —exterior lateral view of juvenile left valve.
Figure 6	Leptocythere bosqueti (Livental)—exterior lateral view of juvenile (?) left valve.
Figure 7	Cytherissa bogatschovi.

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Figure 1	Loxoconcha petasa Livental—exterior lateral view of left valve.
Figure 2	Loxoconcha eichwaldi Livental—exterior lateral view of right valve.
Figure 3	<i>Leptocythere</i> aff. <i>cymbula</i> (Livental)—exterior lateral view of right valve.
Figure 4	Leptocythere multituberculata (Livental)—ex- terior lateral view of left valve.
Figure 5	Leptocythere andrusovi (Livental)—exterior lateral view of right valve.
Figure 6	Cytheroma (?) sp <sub>1</sub> —exterior lateral view of left valve.
Figure 7	Hemicytherura spi-exterior lateral view of right valve.
Figure 8	Loxoconcha ornata ornata Schneider-exterior lateral view of juvenile right valve.
Figure 9	Leptocythere aff. ergeniensis (Svejer-exterior lateral view of juvenile right valve.
Figure 10	Callistocythere cf. diffusa (G.W. Müller)-exterior lateral view of right valve.
Figure 11	Leptocythere bosqueti (Livental)—exterior lateral view of left valve.

Figure 1	Loxoconcha ornata ornata Schneider—exterior lateral view of right valve.
Figure 2	Idem-ventral view.
Figure 3	Idem-exterior lateral view of juvenile right valve.
Figure 4	Idem-dorsal view.
Figure 5	Idem-interior lateral view of juvenile right valve.
Figure 6	Loxoconcha schweyeri Suzin-exterior lateral view of left valve.
Figure 7	Paracandona aff. verrucosa (Stanceva)—exterior lateral view of right valve.

OSTRACODA





Figure 1	Candona (Caspiolla) balcanica (Zalanyi)—exterior lateral view of left valve.
Figure 2	Idem-interior lateral view of left valve.
Figure 3	Amplocypris aff. subacuta Zalanyi—exterior lateral view of left valve.
Figure 4	Idem-interior lateral view of left valve.
Figure 5	Candona (Pontoniella) schemachensis Mandel- stam—exterior lateral view of left valve.
Figure 6	Candona (Pontoniella) sp <sub>1</sub> —exterior lateral view of right valve.
Figure 7	Candona (Caspiolla) confragosa Markova—ex- terior lateral view of left valve.
Figure 8	Leptocythere bacuana (Livental)—exterior lateral view of left valve.

(see p. 1038)

