

Bajocian ostracods from the Som Hill (Bakony Mts, Hungary)

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(with 2 figures and Plates 23–24)

Abstract

The fauna from a bed-parallel infilling consists of 13 ostracod species and subspecies. Six of them are new: *Cardobairdia compacta* n. sp., *Bairdia (Akidobairdia) delicata* n. sp., *Bairdia retifera* n. sp., *Prychobairdia ovata* n. sp., *Pontocyprrella aureola gracile* n. ssp., *Pontocyprrella cavataformis oblonga* n. ssp. The total absence of Cytheridae and the *Bairdia-Cardobairdia-Pontocyprrella-Paracypris* association indicate a deep-water environment. Two Myodocopid forms are dominant in the beds No. 1–2. and decreasing in the beds No. 3, 4 and 6. These forms perhaps were inhabitants of sea-mounts and their decrease indicate the submersion of the sea-mount.

Key words: Middle Jurassic, bajocian, Ostracoda, Bakony, Hungary, new species

Introduction

A big bed-parallel infilling is known in the Liassic Kardosrét Limestone formation of the Som Hill (Bakony Mts, NW-Hungary). Their macrofauna and the geological condition of the section are published in GALÁ CZ, 1975,

1985, SZABÓ 1979–1983, and WENDT 1971. The elaboration of the microfauna especially the ostracods have been financially supported by the OTKA project No. T 4431 of J. SZABÓ.

Geology

The Som Hill (Fig. 1) consists of mainly Upper Triassic and Lower Liassic limestones (Dachstein and Kardosrét Limestone Formations) with a lot of infilled fissures. There is a big bed-parallel infilling (about 180 cm) with 6 beds of red-brownish limestone (Fig. 2). It has a rich ammonite-fauna, beds 1–3 belong to the zone Humphresianum, beds 4–6 to the Niortense Zone (Bajocian) (GALÁ CZ, 1978).

About 0.5 kg limestone was dissolved from each layer by concentrated acetic acid. There was an investigable ostracod material in rocks except of bed 5 (from beds 1 and 2 we had a joint material).

The specimen number from beds 1–2 was 204, from bed 3: 211, from bed 4: 175 and from bed 6: 53, altogether 643.

Systematical part

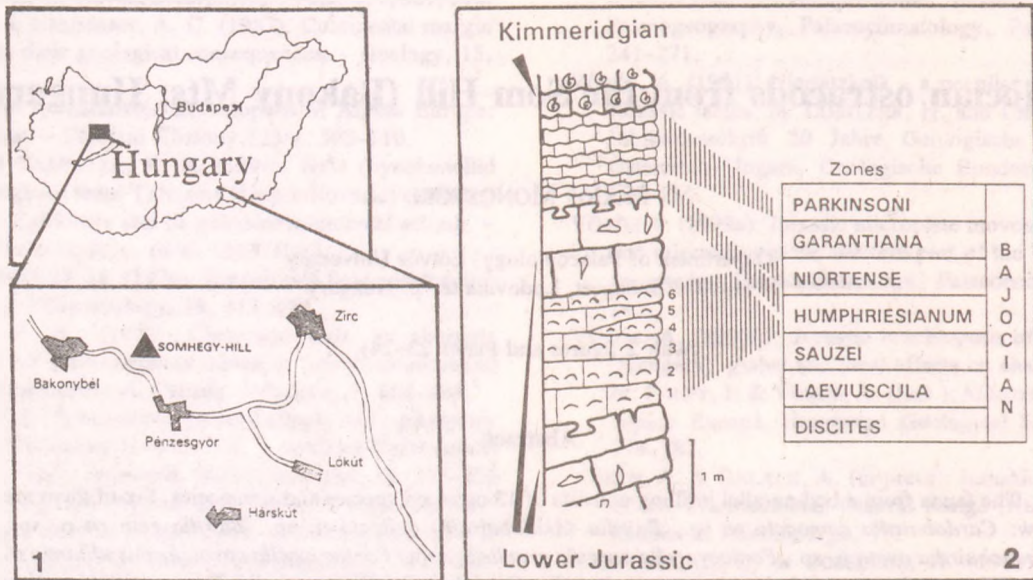
Ostracoda LATREILLE, 1806 classis
Myodocopida SARS, 1866 ordo
Halocypriformis SKOGSBERG, 1920 subordo
Thaumatocyprididae G. W. MÜLLER, 1906 family
Thaumatocypris G. W. MÜLLER, 1906 genus

Thaumatocypris sp.
Pl. 23. fig. 1.

Remarks: Fragmented specimens with circular shape, characteristic for the Jurassic form ornamentation and posterodorsal blunt spine.

Dimensions: L > 0.63 mm

Material: 3 fragments from bed 3.



Figs. 1-2. 1. The Som Hill locality. 2. The Bajocian section of the Som Hill. 1-6. The beds of the fissure fill.

Cladocopa SARS, 1866 subordo
 Polycopidae SARS, 1866 familia
Polycope G. O. SARS, 1866 genus

Polycope sp.
 Pl. 23. fig. 2.

Remarks: Circular form without ornamentation, named by auct. as *P. pelta*. The difficulties of the interpretations are treated in HARLOFF (1933).

Dimensions: L = 0.39-0.51 mm, H = 0.35-0.43 mm,
 L/H = 1.11-1.19

Material: 68 carapaces from beds 1-2, 3, 4, 6.

Myodocopid form gen. et sp. indet.

Remarks: Nearly spherical outline with a little anterior beak. All other features are unknown, even the genus is not determinable.

Dimensions: L = 0.23-0.35 mm, H = 0.19-0.30 mm,
 L/H = 1.14-1.30.

Material: 158 carapaces from beds 1-2, 3, 4.

Podocopida G. W. MÜLLER, 1894 ordo
 Metacopa SYLVESTER-BRADLEY, 1967 subordo
 Saipanettidae MCKENZIE, 1968 familia
Cardobairdia VAN DEN BOLD, 1960 genus

Cardobairdia inflata spinosa MONOSTORI, 1995
 Pl. 23. figs. 3-5.

1995 *Cardobairdia inflata spinosa* n. ssp. - MONOSTORI, p. 159, Pl. 2. f. 4.

Description: the anterior outline is narrowly and asymmetrically arched, it turn gradually into the hardly and asymmetrically arched dorsal outline. After breaking the posterior outline of the left valve nearly straight and goes at 60° angles to the line of length. At 1/3 height it turns abruptly into the slightly and symmetrically arched ventral outline. The posterior part of right valve is much narrower and reaches beyond the left valve at the mid height. The ventral outline sometimes is hardly arched. The left valve somewhat overlaps the right one, except of the caudal part.

Remarks: There is a better material in this locality than in the type locality. Some of the specimens are more elongated.

Dimensions L = 0.61-0.76 mm, H = 0.30-0.36 mm,
 L/H = 1,74-2.13.

Material: 48 carapaces from beds 1-2, 3, 4, 6.

Cardobairdia compacta n. sp.
 Pl. 23. fig. 6.

Derivatio nominis: after its stubby form.

Locus typicus: Som Hill, Bakony Mts.

Stratum typicum: Bajocian, Humphresianum Zone, Bed 1-2.

Description: The anterior outline of the left valves is nearly symmetrically rounded. It turns after a break into the hardly convex dorsal outline at 1/4 of the length. After a break, at 9/10 length the posterior outline is narrowly and somewhat asymmetrically rounded. The ventral outline gradually turns into the symmetrically rounded ventral outline. The dorsal outline of the right valve is somewhat sinuous, the posterior outline is angular with a break in the middle, the ventral outline nearly straight. The left valve

overlap the right one throughout, the ventral overlap is very strong. Maximum height at about mid-length.

Comparison: the species is stubby similarly to *C. liassica* (DREXLER, 1958), but the outline is very different.

Dimensions: L = 0.65 mm, H = 0.44 mm, L/H = 1.48.

Material: 47 carapaces from beds 1-2, 3, 4, 6.

Podocopa SARS, 1866, subordo
Bairdiacea SARS, 1866, superfamilia
Bairdiidae SARS, 1888 familia
Bairdia MCCOY, 1844 genus

Bairdia (Akidobairdia) delicata n. sp.
Pl. 23. fig. 7.

Derivatio nominis: after its graceful form.

Locus typicus: Som Hill, Bakony Mts.

Stratum typicum: Bajocian, Niortense Zone bed 4.

Description: The anterior outline of the left valve is very asymmetrically rounded. After a very angular break it turns into the nearly symmetrical dorsal outline being anteriorly and posteriorly somewhat concave, in the median part slightly convex. The posterior outline is asymmetrical, very narrow, somewhat acute upwards. The ventral outline is nearly straight, its median part gently convex. Height at the midlength. The dorsal outline of the right valve is more angular.

Comparison: The species is less acute both anteriorly and posteriorly than *B. (A.) farinacciae* OERTLI, 1967.

Dimensions: L = 1.08 mm, H = 0.40 mm, L/H = 2.70

Material: 2 carapaces from bed 4.

Bairdia (Akidobairdia) n. sp. 1
Pl. 23. fig. 8.

Remarks: Incompletely preserved form. It is anteriorly less asymmetrical, dorsally more asymmetrical, the anterodorsal and posterodorsal parts are hardly concave, the posterior end is acute near the level of the ventral outline. Its form definitely differs from that of *B. (A.) delicata*.

Dimensions: L = 0.95 mm, H = 0.37 mm, L/H = 2.57.

Material: 2 carapaces from beds 1-2, 6.

Bairdia hilda JONES, 1884
Pl. 23, figs 9-11.

1884 *Bairdia hilda* n. sp. - JONES, p. 771, Pl. 34. f. 20.

1888 *Bairdia fullonica* n. sp. - JONES & SHERBORN, p. 253, Pl. 5. f. 4a-c.

1963 *Bairdia hilda* JONES, 1884 - BATE, pp. 188-189. Pl. 2., f. 9-12., Pl. 3. f. 1-4.

1969 *Bairdia hilda* JONES, 1884 - BATE, p. 383., Pl. 1., f. 5-6.

1969 *Bairdia hilda* JONES, 1884 - BATE, pp. 397-398., Pl. 4., f. 5-6.

?1978 *Bairdia hilda* JONES, 1884 - PLATKOVA & PERMIAKOVA, p. 124., Pl. 45., f. 6.

1983 *Bairdia hilda* JONES, 1884 - MORRIS, Pl. IV. f. 11-14.

1995 *Bairdia hilda* JONES, 1884 - MONOSTORI, p. 160., Pl. 2., f. 8., Pl. 3., f. 1-2.

Remarks: Most frequent are the elongated forms resembling the type figure. The slope of the posterodorsal part of outline is less abrupt, the upward directed posterior end is more acute in comparison to the Bathonian elongated forms of the Mecsek Mts (MONOSTORI, 1995).

Dimensions: L = 0.69-0.76 mm, H = 0.34-0.42 mm, L/H = 1.81-2.03.

Material: 63 carapaces from beds 1-2, 3, 4, 6.

Bairdia cf. caudifera MONOSTORI, 1995
Pl. 23, figs 12-13.

Remarks: Fragmented specimens. The asymmetrical and somewhat angular anterior outline, the abrupt and straight posterodorsal outline turning into the upward directed strong caudal process, the short straight ventral outline are similar to the Bathonian type form from Mecsek Mts. (MONOSTORI, 1995).

Dimensions: L = 0.68-0.92 mm, H = 0.55 mm, W = 0.33, L/H = 1.67.

Material: 7 carapaces from beds 3, 4.

Bairdia retifera n. sp.
Pl. 23. fig. 14.

Derivatio nominis: A part of the surface has a strong network-like ornamentation.

Locus typicus: Som Hill, Bakony Mts.

Stratum typicum: Bajocian, Humphresianum Zone, beds 1-2.

Description: The anterior outline of the left valve is somewhat asymmetrically rounded. The dorsal outline is highly rounded. After a break at 0.8 length the posterodorsal outline is straight and abrupt. The posterior outline is a short and pointed caudal process at about 1/3 height. The ventral outline somewhat sinuous. The dorsal outline of the right valve is more trapezoidal, its median part straight. The posterior half of the right valve bear a strong reticulation.

Comparison: There is no reticulated Jurassic form with similar outline.

Dimensions: L = 0.65 mm, H = 0.40 mm, L/H = 1.63.

Material: 48 carapaces from beds 1-2, 3, 4, 6.

Bairdia div. sp.

Remarks: incompletely preserved specimens of different species.

Material: 5 carapaces from beds 1-2, 6.

Ptychobairdia ovata n. sp.
Pl. 23. figs 15–16.

Derivatio nominis: it has a nearly oval outline.

Locus typicus: Som Hill, Bakony Mts.

Stratum typicum: Bajocian, Niortense Zone, bed 6.

Description: The anterior outline of the left valve is broadly and somewhat asymmetrically rounded, its lower part has larger radius. It turns continuously into the broadly and symmetrically rounded dorsal outline. The posterior outline is nearly symmetrically rounded, it is narrower than the anterior one. The ventral outline is hardly convex. The right valve is more angular dorsally, where there is a distinct overlap. There is a characteristic anterior-anteroventral and posterior-posteroventral ridge near the margins accompanied by depression. The ventrolateral part is swollen.

Comparison: it differs from all Jurassic *Ptychobairdias* with its shape and ornamentation.

Dimensions: L = 0.60–0.87 mm, H = 0.41–0.60 mm, L/H = 1.45–1.46.

Material: 8 carapaces from beds 1–2, 3, 4, 6.

Cypridacea SARS, 1866 superfamilia
Pontocyprididae G. W. MÜLLER familia
Pontocyprrella LJUBIMOVA, 1955

Pontocyprrella aureola aureola LJUBIMOVA, 1955
Pl. 24. figs 1–2.

1955 *Pontocyprrella aureola* n. sp. – LJUBIMOVA, p. 20, Pl. I. f. 2.

1974 *Pontocyprrella* cf. *aureola* LJUBIMOVA, 1955 – DÉPECHE, p. 224, Pl. 3., f. 1–7.

?1978 *Pontocyprrella aureola* LJUBIMOVA, 1955 – PIATKOVA & PERMIAKOVA, p. 127, Pl. 47., f. 7.

Remarks: This form is somewhat less pointed posteriorly, similarly to DÉPECHE's form. The figured specimen of PIATKOVA & PERMIAKOVA (1978) is obviously incomplete.

Dimensions: L = 0.82–0.87 mm, H = 0.41–0.42 mm, L/H = 1.95–2.12.

Material: 29 carapaces from beds 1–2, 3, 4, 6.

Pontocyprrella aureola gracile n. ssp.
Pl. 24. fig. 3.

Derivatio nominis: after its narrow shape.

Locus typicus: Som Hill, Bakony Mts.

Stratum typicum: Bajocian, Niortense Zone, bed 4.

Comparison: Very elongated form. The run of the outlines are similar to that in the nominate subspecies. The posterior end is more acute, the overlap is slighter.

Dimensions: L = 0.95 mm, H = 0.37 mm, L/H = 2.57.

Material: 11 carapaces from beds 3, 4.

Pontocyprrella cavataformis oblonga n. ssp.
Pl. 24. figs 4–5.

Derivatio nominis: from its elongated form as compared to that of the nominate subspecies.

Locus typicus: Som Hill, Bakony Mts.

Stratum typicum: Bajocian, Humphresianum Zone, bed 1–2.

Comparison: it is more elongated as the nominate subspecies (MONOSTORI, 1995), the overlap is slight as compared to the nominate subspecies.

Dimensions: L = 0.60–0.69 mm, H = 0.33–0.36 mm, L/H = 1.82–1.92.

Material: 29 carapaces from beds 1–2, 3, 4, 6.

"*Pontocyprrella suprajurassica* OERTLI, 1959"
sensu MORRIS, 1983
Pl. 24. figs 6–7.

1983 *Pontocyprrella suprajurassica* OERTLI, 1959 – MORRIS, Pl. 4., f. 20–22.

1995 *Pontocyprrella?* sp. – MONOSTORI, pp. , Pl. 4. f. 2.

Remarks: similar to Bathonian form from the Mecsek Mts.

Dimensions: L = 0.51–0.80 mm, H = 0.27–0.39 mm, L/H = 1.92–2.05.

Material: 17 carapaces from beds 1–2, 3, 4.

Candonidae KUFMANN, 1900 familia
Paracypridinae SARS, 1923, subfamilia
Paracypris SARS, 1866

Paracypris redcarensis (BLAKE, 1876)
Pl. 24. figs 8–9.

1959 *Paracypris redcarensis* (TATE & BLAKE, 1876) – APOSTOLESCU, p. 806., Pl. II., f. 32.

1975 *Paracypris?* *redcarensis* (BLAKE, 1876) – MICHELSEN, pp. 134–135, Pl. 4., f. 48–49.

1980 *Paracypris?* *redcarensis* (BLAKE, 1876) – SIVHED, p. 43., Pl. III., f. 23, 26, 28.

1982 *Paracypris?* *redcarensis* (BLAKE, 1876) – HERRIG, p. 239., Pl. f. 10.

1985 *Paracypris liassica* (BATE & COLEMAN, 1975) – RIEGRAF, p. 77., Pl. 2., f. 10.

1993 *Paracypris?* *redcarensis* (BLAKE, 1876) – HARLOFF, pp. 70–73, Pl. 3., f. 5, 13.

1994 *Paracypris?* *redcarensis* (BLAKE, 1876) – HARLOFF & JAGER, p. 26., Pl. 7., f. 13.

Remarks: These Bajocian specimens are very similar to elongated Liassic specimens (SIVHED, 1980, HARLOFF, 1993). the *P. liassica* (BATE & COLEMAN, 1975) in RIEGRAF (1985) is not similar to the type figures, it

belongs to the species *redcarensis*. The Bajocian specimens represent the elongated variants of the species. Dimensions: H = 0.25 mm, L = 0.55–0.57 mm, L/H = 2.20–2.28.

Material: 66 carapaces in beds 1–2, 3, 4, 6.

Paracypris obanyensis MONOSTORI, 1995
Pl. 24. figs 10–12.

Remarks: There is a slight variation in the shape of the dorsal outline.

Dimensions: L = 0.63–0.98 mm, H = 0.32–0.50 mm,
L/H = 1.96–2.08.

Material: 28 carapaces from beds 1–2, 3, 4, 6.

Cypridae gen. et sp. indet.

Remarks: Some badly preserved forms.

Material: 4 carapaces from beds 3, 4.

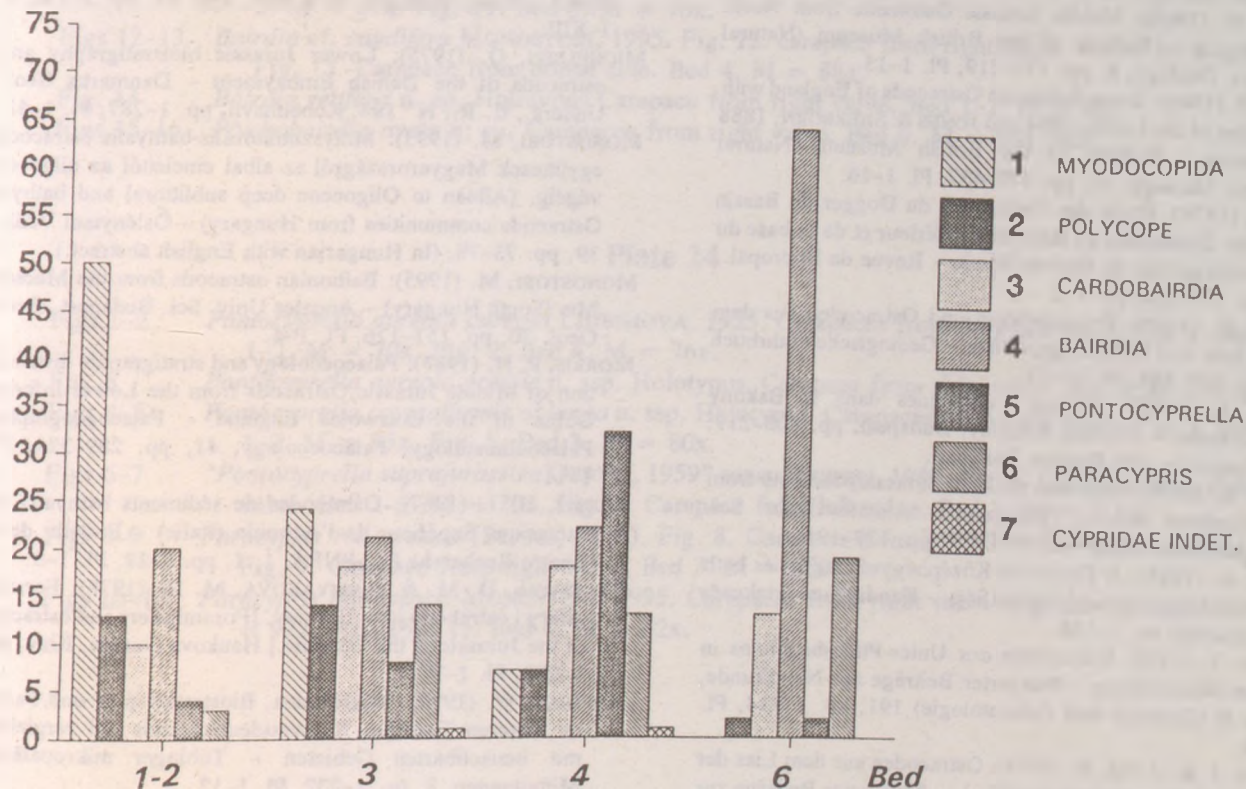


Fig. 3. Statistical distribution of the ostracod genera in the beds of the fissure fill.

Conclusions

The faunal list includes 13 species and subspecies, 6 of them are new. The known species are typical forms in the epicontinental Bajocian and Bathonian except *Paracypris redcarensis* which is a well known epicontinental Liassic form. A part of the ostracods are determinable only on generic or even on family level.

Palaeoecology

Basic character of the fauna is the total absence of the Cytheridae dominating the epicontinental ostracoda faunas. There is no characteristically shallow-shelf form in the associations. The genera *Cardobairdia* and *Pontocyprilla*

are common forms in the bathyal ostracod communities of Hungary up to the Paleogene (MONOSTORI, 1993, 1995). Studying the statistical distribution of the genera in the beds we can see some distinct differences (Fig. 3). Most characteristic is the gradual decrease of the percentage of *Myodocopida* indet. and *Polycope*. There are similar infilled fissures in the Liassic limestones of Úrkút (Bakony Mts.) also with many *Polycope* in the ostracod fauna. The indeterminable *Myodocopid* genera and the *Polycope* obviously were inhabitants of the sea-mount territories, where the fissures have been formed. Their decreasing percentage may indicate the submerging of the sea-mount. Apart from the *Myodocopids*, the *Bairdia* is the most frequent among the other forms, also always significant is

the *Cardobairdia*. The percentage of the *Pontocyprilla* is very variable, perhaps its spatial and temporal distribution was more scattered. The rare *Ptychobairdia* is a form characteristic in the Triassic for the submerging sea-mount or near-platform territories (MONOSTORI, 1995).

Four taxa of 13 are common faunas in epicontinental Jurassic, and this indicate a permanent connection between the deeper epicontinental and Tethyan ostracod faunas. There are 6 common forms with the Bathonian fauna of the Mecsek Mts, which was a transitional region between the Tethys and the epicontinental seas.

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Plate 23

- Fig. 1 *Thaumatocypris* sp. Lateral view of carapace fragment. Bed 3. M = 63x.
 Fig. 2 *Polycope* sp. Lateral view of carapace. Bed 3. M = 103x.
 Figs 3-5 *Cardobairdia inflata spinosa* MONOSTORI, 1995. Carapaces from right valve. Fig. 3. Bed 1-2. M = 86x. Fig. 4-5. Bed 4. M = 70x, 80x.
 Fig 6 *Cardobairdia compacta* n. sp. Holotypus. Carapace from right valve. Bed 1-2. M = 80x.
 Fig. 7 *Bairdia (Akidobairdia) delicata* n. sp. Holotypus. Carapace from left valve. Bed 4. M = 52x.
 Fig. 8 *Bairdia (Akidobairdia)* n. sp. 1. Carapace from right valve. Bed 1-2. M = 63x.
 Figs 9-11 *Bairdia hilda* JONES, 1884. Carapaces from right valve. Fig. 9. Bed 4. M = 87x. Fig. 10. Bed 3. M = 87x. Fig. 11. Bed 6. M = 76x.
 Figs 12-13 *Bairdia* cf. *caudifera* MONOSTORI, 1995. Fig. 12. carapace from right valve. Bed 4. M = 60x. Fig. 13. Carapace from dorsal side. Bed 4. M = 88x.
 Fig. 14 *Bairdia retifera* n. sp. Holotypus Carapace from right valve. Bed 1-2. M = 82x.
 Figs 15-16 *Ptychobairdia ovata* n. sp. Carapaces from right valve. Bed 6. M = 92x, 60x.

Plate 24

- Figs 1-2 *Pontocyprilla aureola aureola* LJUBIMOVA, 1955. Carapaces from the right valve. Fig. 1. Bed 1-2. M = 70x. Fig. 2. Bed 4. M = 76x.
 Fig. 3 *Pontocyprilla aureola gracile* n. ssp. Holotypus. Carapace from right valve. Bed 4. M = 60x.
 Figs 4-5 *Pontocyprilla cavataformis oblonga* n. ssp. Holotypus. Carapaces from right valve. Fig. 4. Bed 1-2. M = 95x. Fig. 5. Bed 3. M = 80x.
 Figs 6-7 "*Pontocyprilla suprajurassica* OERTLI, 1959" sensu MORRIS, 1983. Fig. 6. Carapace from right valve. Bed 1-2. M = 70x. Fig. 7. Carapace from left valve. Bed 3. M = 112x.
 Figs 8-9 *Paracypris redcarensis* (BLAKE, 1876). Fig. 8. Carapace from left valve. Bed 3. M = 100x. Fig. 9. Carapace from right valve. Bed 3. M = 100x.
 Figs 10-12 *Paracypris obanyensis* MONOSTORI, 1995. Carapaces from right valve. Figs 10-12. Bed 3. M = 92x, 70x. Fig. 11. Bed 4. M = 62x.