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Cypria bicolor n. sp., a new crenobiont freshwater ostracod (Crustacea, Ostracoda) from Slovenia

by

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Abstract: *Cypria bicolor* n. sp., a new species of freshwater Ostracoda belonging to the Podocopida-Cypridoidea-Candonidae-Cyclocypridinae is described from a spring near Ljubljana in Slovenia.

Résumé: *Cypria bicolor* n. sp., une nouvelle espèce d'Ostracode d'eau douce appartenant aux Podocopida-Cypridoidea-Candonidae-Cyclocypridinae est décrite d'une source près de Ljubljana en Slovénie.

Phylum or subphylum Crustacea Pennant, 1777
Class Ostracoda Latreille, 1806
Subclass Podocopa Müller, 1894
Ordre Podocopida Sars, 1866
Superfamily Cypridoidea Baird, 1845
Family Candonidae Kaufmann, 1900
Subfamily Cyclocypridinae Kaufmann, 1900

Cypria bicolor n. sp.

Material examined: Several female and male specimens, all collected at the type locality. All specimens, the female holotype and male allotype included, are deposited in the hydrobiological collections of the Prirodonaucen Muzej na Makedonija at Skopje, Macedonia.

Locus typicus: Izice-spring near Ig, 10 km south of Ljubljana. The locality is a carstic spring at the edge of Ljubljansko barje (swamp). Leg. Dr Boris Sket, 18-23 July 1985. Other species: *Cypria reptans stygia* Klie, 1935 and *Candona aemonae* Klie, 1935.

Derivatio nominis: from the latin bicolor, with 2 colours.

Abbreviations used in text and figures: RV = right valve; LV = left valve; L = carapace length; B = carapace width in dorsal view; H = carapace height in lateral view.

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Differential diagnosis

A small crenobiont *Cypria* species with a very characteristic carapace shape and colour pattern. Carapace bean-shaped in lateral view; subelliptic in dorsal view, with both ends rounded, the anterior end slightly narrower than the posterior end. Valves with two very characteristic brownish purple transverse bands uniting dorsally into a narrow, ventrally into a broad stripe. Surface of valves with sparse and fine setae. Main terminal setae of the mandibular palp brush-like. Natatory setae of the antennae (A2) reduced, distally very thin; the longest (= first) seta extending to the middle of the terminal A2-joint; the remaining setae progressively shorter; the fifth and last seta barely reaching beyond the middle of the penultimate joint. Genital fold of the female without any process. Furcal trunk with a very long and smooth posterior seta; this seta as long as the main terminal claw. Hemipenis with two terminal processes, of which the outer extends beyond the inner one.

Description

Female. - Dorsal view (fig. 1E): Carapace subelliptic; posterior end distinctly rounded, anterior end slightly narrower; carapace most wide behind the middle, with B very slightly smaller than 1/2 L; laterally evenly rounded; eye pigment present; colour pattern with two transverse bands, the ventral arms of which protract to the anterior end. In lateral view, the coloured bands postero-dorsally unite into a narrow, ventrally into a broad stripe (fig. 1A).

Left valve bean-shaped in lateral view (fig. 1A), differing in this feature from all the remaining European species of the genus. Size (biggest specimen): L = 0.63 mm; H = 0.35 mm; L/H = 100/55. Dorsal margin weakly arched, evenly joining the anterior and the more broadly rounded anterior margin. Inner margin distinctly displaced inwards at both ends, running far from the line of concrescence; inner margin anteriorly with a convex depression. Fused zone distinctly narrow (fig. 1A,B,C), postero-ventrally slightly enlarged (fig. 1B). Selvage extending beyond the free margin of the valve only at the anterior end of the valve. Ventral margin slightly concave, not protruding at the mouth area. The two coloured bands join at the inferior part of the valve. A wide colourless area extends from behind the eye towards the central muscle scars (fig. 1A).

Right valve: Dorsal margin distinctly arched, joining the anterior as well as the posterior margin in a weak depression (fig. 1D). Size: L = 0.61 mm; H (situated in the middle) = 0.34 mm; L/H = 100/55. Inner margin as in the LV, distinctly displaced inwards. Fused zone much larger than in the LV, above all at the postero-ventral margin. Selvage extending beyond the free margin of the valve nearly all around the valve. Ventral margin as in the LV, not protruding at the mouth area.

Antennule (A1) (fig. 2A) strongly developed, with very characteristic long and barbed setae on the 2nd and 3rd joint and claw-like setae on the 4th and 5th joints. Terminal (= 7th) joint more than twice as long as broad; aesthetasc ya distinctly longer than the terminal joint.

Antenna (A2) strongly developed (fig. 2B). Aesthetasc Y very long and thin. Natatory setae relatively short, with very thin distal ends. First natatory seta

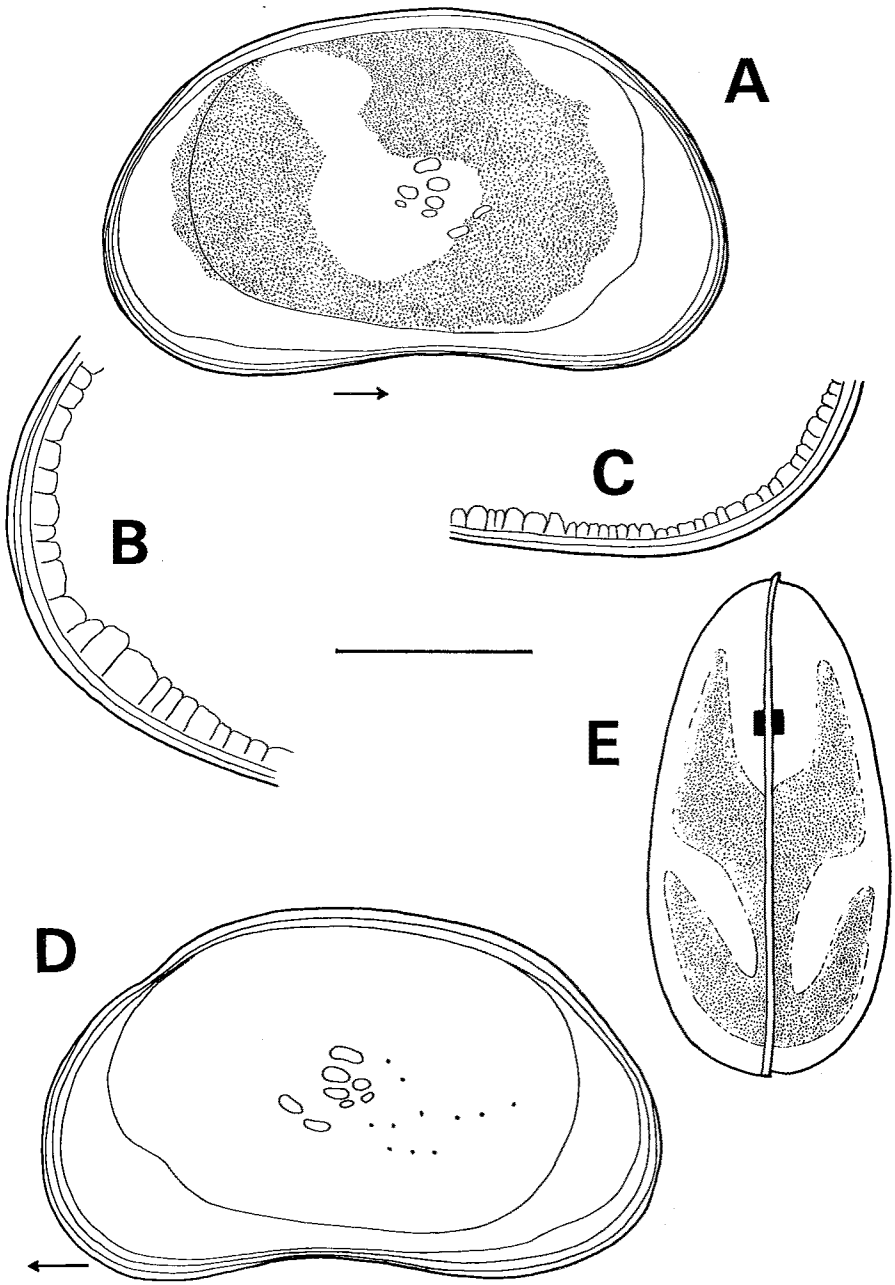


Fig. 1. - *Cypria bicolor* n. sp., female. A: LV, inner view. B: Postero-ventral detail of A. C: Antero-ventral detail of A. D: RV, inner view. E: Carapace in dorsal view. Scale bar: 0.20 mm for A, D, E.

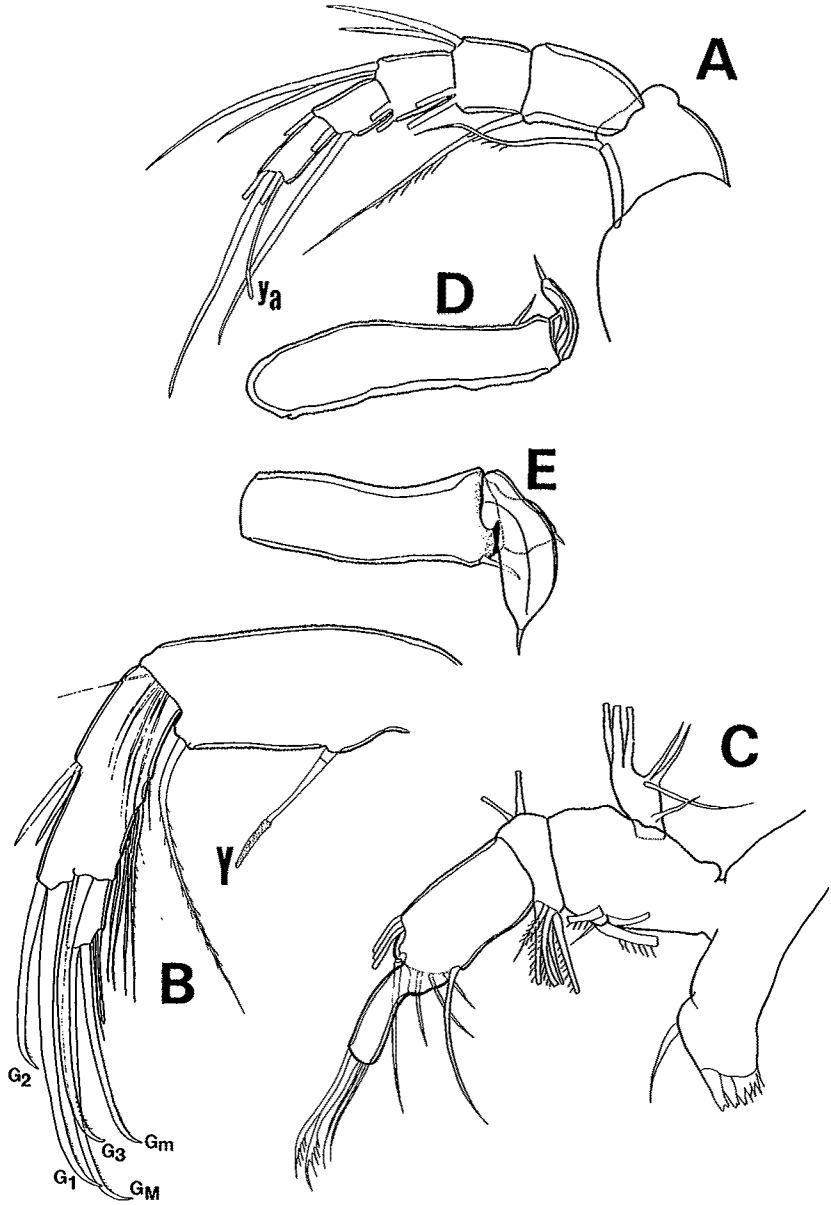


Fig. 2. - *Cypria bicolor* n. sp., A-C female, D-E male. A: Antennule (A1). B: Antenna (A2). C: Mandibular palp. D: Left prehensile organ. E: Right prehensile organ.

extending about to the middle of the terminal A2-joint; the remaining 4 setae progressively shorter; 5th natatory seta only about as long as the sensitive (= 6th) seta, the latter barely reaching beyond the middle of the penultimate A2-joint. G2-claw distinctly shorter and slimmer than the neighbouring G1 and G3-claws. The two z-setae near the base of the G1-3-claws do not reach to the tips of those claws; the claw-like z-seta slightly extends beyond the middle of the G2-claw. Both end-claws (GM and Gm) well developed, the GM-claw extending beyond the tip of the longest (= G1) claw of the penultimate A2-joint.

Mandibular palp (fig. 2C): alpha seta needle-like; beta-seta tapering and barbed; gamma-seta untransformed. Terminal joint cylindrical, with two simple and two stronger, brush-like terminal setae.

First thoracopod (T1, walking leg) (fig. 3A) with a long seta on the 1st endopodial joint. Terminal claw strongly developed and conspicuously longer than the combined three distal joints of the limb. Second thoracopod (T2, cleaning limb) as shown in fig. 3B.

Genital lobe of the female without any protruding process (fig. 3C). Furcal trunk relatively short, weakly curved, ca 7x as long as broad at the distal end; posterior margin with delicate hairs; length ratios of the anterior margin of the furcal trunk to the terminal seta and claws as follows (the second number applies to the anterior, i.e. the terminal seta): 50:12:33:28:33. Posterior end of the body without a seta.

Male. - Carapace very similar in shape to that of the female, but smaller. Size of the LV: L = 0.60 mm; H = 0.34 mm; L/H = 100/56.66. Size of the RV: L = 0.59 mm; H = 0.33 mm; L/H = 100/55.8. Antenna (A2): Penultimate joint divided; male bristles (transformed t2 and t3-setae) strongly developed, extending to the base of the claws of the terminal joint. Both Mx2-prehensile organs with a well developed, elongate trunk; left trunk nearly cylindrical (fig. 2D); right trunk distally slightly enlarged (fig. 2E); right finger conspicuously swollen; left finger smaller and weakly curved.

Hemipenis with two long distal processes; the inner process is broad and distally rounded; the outer process is longer, curved and distally pointed (fig. 3D,E).

Discussion

Petkovski (1976) has given a review of the *Cypria*-species occurring in Europe. *Cypria ophthalmica* (Jurine, 1820), with the infraspecific 'forms' *ophthalmica* and *lacustris*, and *Cypria exsculpta* (Fischer, 1855) are most widely distributed.

Cypria subsalsa Redeke, 1936, which occurs in slightly salty coastal and inland waters, was described from the Netherlands as a subspecies of *C. ophthalmica*. It was considered a separate species by Petkovski (1976). Wouters (1984) confirmed this point of view and provided a detailed redescription of the species.

Other species within the genus are *C. karamani* Petkovski, 1976 and *C. sketi* Petkovski, 1976, both described from former Yugoslavia. *Cypria cavernae* Wagenleitner, 1990 is only known from cave waters near Trieste in Italy; in our opinion, the taxonomic relation of the latter species with *C. ophthalmica* f. *lacustris* should be re-examined. All those species have long A2 natatory setae and hence are good swimmers.

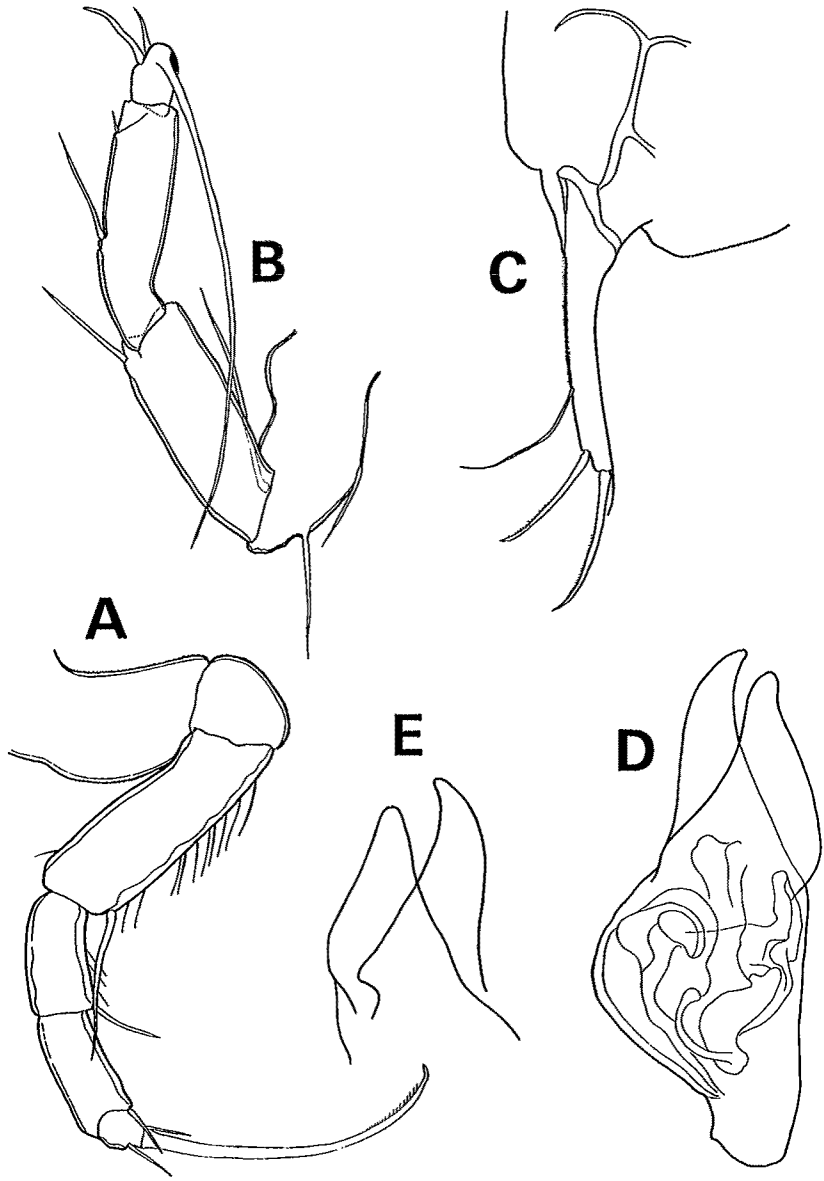


Fig. 3. - *Cypria bicolor* n. sp., A-C female, D-E male. A: 1st thoracopod (T1). B: 2nd thoracopod (T2). C: Furcal ramus and genital fold. D: Hemipenis. E: Distal detail of D.

A second group of species includes spring dwellers with strongly reduced A2 natatory setae, among which *C. curvifurcata* Klie, 1923 and *C. reptans* Bronstein, 1928, both described from Russia.

C. stygia Klie, 1935, reported from the karstic area in Slovenia and from northern Italy (Petkovski, 1976), as well as *C. helokrenica* Kantorek & Absolon, 1975, described from helocrene springs in Slovakia, were both considered to belong to *C. reptans* (*C. reptans stygia* and *C. reptans helokrenica*) by Petkovski (1976).

Because of the reduced natatory setae, *C. bicolor* n. sp. belongs to the second group of species, which are devoid of any swimming ability. *C. bicolor* differs from those species in the shape and colour pattern of the carapace and in characters of the mandibular palp.

C. curvifurcata Klie is bigger, the carapace is stouter, the colour is uniform dark brown and the posteriour seta of the furca is barbed.

In *C. reptans* Bronstein - the infraspecific 'forms' *stygia* and *helokrenica* included - the dorsal margin of the carapace is high and strongly arched in lateral view; the colour is uniform yellowish brown. Moreover, the female genital lobe bears a conspicuous process and the posterior seta of the furca is short. The *C. reptans stygia* specimens occurring together with the new species in the Izice-spring also differ in the following characters: (1) the carapace in dorsal view is narrower; (2) the terminal claw and the seta of the 1st endopodial joint of the walking limb (T1) are distinctly shorter; (3) the seta of the 2nd A1-joint is shorter; (4) the main distal setae of the mandibularpalp are simple, not brush-like; (5) the A2 natatory setae are distinctly longer.

We would like to point out that *C. mediana* Hoff, 1942, described from North America (Illinois, USA), is very similar in carapace shape. But the Northern American species is distinctly bigger, it has long A2 natatory setae and the posterior seta of the furca is conspicuously shorter than in *C. bicolor*.

Acknowledgment

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