

INVESTIGATION OF CALPIONELLIDES FROM THE MECSEK MOUNTAINS (S HUNGARY), PART II

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The present paper is the continuation of the description of new calpionellid taxa that was begun fifteen years ago (NAGY 1986). The manuscript was written in 1989, but it was not terminated because of the deterioration of the author's health. The publication of the concise description of taxa is intended to facilitate more detailed study and correlation of the calpionellide-bearing geological profiles. Five new genera and 55 new species are described; no more new descriptions could be included. The codes and registration numbers of the described taxa are presented, just as they were in the previous paper. The photos (Plates I to IV) illustrate the holotypes only; their dimensions are given in Table 1 (in micrometers). Table 2 ('88HM-2) is a new, preliminary version of the calpionellid zonation of the Mecsek Mts (HM= Hungary, Mecsek), comprising 54 zones, where the zones are delimited by the first occurrence of taxa. Finally the author sums up his taxonomical and phylogenetical remarks and his recommendations for further studies.

Taxonomy

Calpionella LORENZ, 1902

Calpionella hebalpina n. sp.
(Code: Cha. Registration No.: MP-12)

Derivatio nominis: reference to similarity with the species *C. alpina* and to the obtuse (= *hebes*) aboral end.

Holotypus: Plate I, 12 and Table 1, 1. Sample: 85-53/79, negative: 88/3/8.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: an elongated form of big to medium size. The wall becomes thinner at the aboral end. The lorica is the widest at the shoulder, grows narrower, and is obtusely rounded at the aboral end. The shoulder is well marked, the collar developed, convex in the middle. The oral opening (aperture) is broad.

Calpionella pusillalpina n. sp.
(Code: Cpua. Registration No.: MP-13)

Derivatio nominis: reference to relationship with the species *C. alpina* and to the tiny size (*pusillus* = *tiny*)

Holotypus: Plate I, 13 and Table 1, 2. Sample: 85-53/73, negative: 88/3/7.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: A very small-size, almost isometric form, rather thick-walled. The lorica is the widest at the shoulder, it gets narrower at first gently, then in a strongly bended manner, to the almost acute aboral end. The shoulder is sloped, the collar poorly developed, of upright position. The oral opening is moderately wide.

Crassicalpionella n. g.

Species typica: *Crassicalpionella conica* n. sp.

Derivatio nominis: reference to relationship with the genus *Calpionella* and to the relatively thick (= *crassus*) lorica.

Description: elongated, relatively thick-walled forms of small to medium size, with moderately developed shoulders and upright collar.

Crassicalpionella conica n. sp.
(Code: Ccc. Registration No.: MP-3)

Derivatio nominis: reference to the conical shape of the lorica.

Holotypus: Plate I, 3 and Table 1, 3. Sample: 85-53/56, negative: 88/3/1.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: medium size, elongated form, thick-walled at the shoulder, less thick elsewhere. The lorica is the widest at the shoulder, it gets slightly conically narrower downwards, the aboral end is rounded. The shoulder is slightly sloped, the collar is medium developed, thin as compared to the wall of the lorica, upright. The oral opening is small to medium size.

Crassicalpionella pusilla n. sp.
(Code: Ccp. Registration No.: MP-4)

Derivatio nominis: reference to its very small (*pusillus* = *tiny*) size.

Holotypus: Plate I, 4 and Table 1, 4. Sample: 85-53/73, negative: 88/4/33.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: a very small-size, thick-walled form. The lorica is the widest at the shoulder, growing narrower with gentle, then strong bend to the almost tipped aboral end. The shoulder is strongly sloped, the collar is poorly developed, upright. The oral opening is small to medium in size.

***Sopianella* n. g.**

Species typica: *Sopianella longa* n. sp.

Derivatio nominis: after the Latin name (*Sopiana*) of the city near the locality.

Diagnosis: small to medium-size, elongated forms, the lorica getting narrower at the aboral part, with poorly developed shoulder and right or slightly bended collar.

Sopianella longa n. sp.
(Code: Sl. Registration No.: MP-1)

Derivatio nominis: reference to the long (= *longus*) lorica.

Holotypus: Plate I, 1 and Table 1, 5. Sample: 85-53/60, negative: 88/3/2.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: medium size, thin-walled form. The lorica is the widest at the shoulder, it grows narrower down to the lower third gently, from there stronger. The aboral end is slightly rounded. The shoulder is slightly sloped, the collar is of medium size and standing upright. The oral opening is medium-sized.

Sopianella minuta n. sp.
(Code: Smi. Registration No.: MP-2)

Derivatio nominis: reference to its very small size (*minutus* = *very small*)

Holotypus: Plate I, 2 and Table 1, 6 Sample: 85-53/60, negative: 88/3/3.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: small-sized, thin-walled form. The lorica is the widest just below the shoulder, becoming narrower to the lower four-fifth part gently, from then on stronger. The aboral end is slightly rounded. The shoulder is very underdeveloped, with bended (arcuate) transition. The collar is rudimentary and upright, the oral opening is of small to medium size.

***Baranella* n. g.**

Species typica: *Baranella gracilis* n. sp.

Derivatio nominis: after the name of Baranya County, an administrative unit comprising most of the calpionellid localities.

Diagnosis: small to medium sized, elongated forms with very underdeveloped shoulder and upright collar.

Baranella gracilis n. sp.
(Code: Bg. Registration No.: MP-5)

Derivatio nominis: reference to its slender (= *gracilis*) shape.

Holotypus: Plate I, 5 and Table 1, 7. Sample: 85-53/68, negative: 88/3/6.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: medium-sized, strongly elongated, elliptic form. The lorica is the widest above its centre line, elegantly bending towards both the oral and the aboral end. The aboral end is slightly rounded. The shoulder is strongly sloped, scarcely discernible. The collar is well developed, upright.

Baranella laxa n. sp.
(Code: Bl. Registration No.: MP-6)

Derivatio nominis: reference to the widely open (= *laxus*) oral opening.

Holotypus: Plate I, 6 and Table 1, 8. Sample: 85/53/60, negative: 88/4/32.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: medium-size, thick-walled, slightly elongated oval form. The lorica is the widest above its centre line, getting gradually narrower towards both ends. The aboral end is strongly rounded. The shoulder is strongly sloped, the collar is underdeveloped, upright. The oral opening is wide.

***Tintinnopsella* (MURGEANU et FILIPESCU, 1933)**

Tintinnopsella collcarpathica n. sp.
(Code: Tcoc. RegistrationNo.: J. 10842)

Derivatio nominis: reference to the relationship with the species *T. carpathica* and to the conspicuously well developed collar.

Holotypus: Plate II, 4 and Table 1, 9. Sample: Szv-Ir/1, negative: 84/33/14.

Locus typicus: Mázaszászvár.

Stratum typicum: Valanginian.

Description: medium to big size, elongated form, with relatively narrow oral opening. It is the widest at the centre line; from there the walls bend elegantly towards the oral opening and the aboral end. The aboral end is almost pointed, only very slightly rounded. The collar is very well developed, it makes out about 1/6 of the length of the lorica, it is oriented about 35° upwards and outwards; its end gently turns upward.

Tintinnopsella crassicarpathica n. sp.
(Code: Tcc. Registration No.: J. 10843)

Derivatio nominis: reference to its relationship with the species *T. carpathica* and to its relatively thick (= *crassus*) wall.

Holotypus: Plate I, 16 and Table 1, 10. Sample: Pv-V.23, negative: 84/20/21.

Locus typicus: Pécsvárad.

Stratum typicum: Berriasian.

Description: a small-sized, relatively thick-walled form, with a medium-size oral opening. The lorica is the widest at the centre line, the aboral end is almost pointed. The collar joins the lorica at an angle of 45° (bent outwards).

Tintinnopsella brevicarpathica n. sp.
(Code: Tbc. Registration No.: MP-14)

Derivatio nominis: reference to its relationship with the species *T. carpathica* and to the short (= *brevis*) lorica.

Holotypus: Plate I, 14 and Table 1, 11. Sample: 85-54-2/62, negative: 88/3/26.

Locus typicus: Magyaregregy.

Stratum typicum: Valanginian.

Description: medium to big sized, only slightly elongated, shield-shaped form with medium-thick wall. The lorica is the widest a bit below the centre line; it gets narrower towards the oral end only very slightly, and passes with a continuous bend into the almost pointed aboral end. The collar is fairly developed, slightly thickened, and it points upwards only very gently. The oral opening is large.

Tintinnopsella perbrevicarpathica n. sp.
(Code: Tpbcc. registration No.: MP.15)

Derivatio nominis: reference to the relationship with the species *T. carpathica* and to the very short (= *perbrevis*) lorica.

Holotypus: Plate I, 18 and Table 1, 12. Sample: 85-54-2/62, negative: 88/3/25.

Locus typicus: Magyaregregy.

Stratum typicum: Valanginian.

Description: big-to medium sized, isometric form with fairly thick wall that gets narrower at the aboral end. The lorica is the widest just below the centre line, grows gently narrower towards the oral opening, and bend with a strong arc to the wide and slightly rounded aboral end. The collar is well developed, after initial thickening it bends horizontally outwards, then — as to be seen on the right-hand collar section — its very end points straight upwards along a very short part. The oral opening is very large.

Tintinnopsella longocarpathica n. sp.
(Code: Tlc. Registration No.: J. 10838)

Derivatio nominis: reference to its transitional nature between the species *T. longa* and *T. carpathica*.

Holotypus: Plate II, 1 and Table 1, 13. Sample: Tb-2/41, negative: 84/33/6.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: medium to big sized, elongated form, with relatively large oral opening. The lorica is the widest — slightly wider than the oral opening — around the centre line. Upwards the lorica gets only a little narrower. Downwards it becomes narrower to the lower 1/4 part slowly, from then on faster. The aboral end is pointed, displaying an ornamental caudal appendix. The collar is medium developed, pointing upwards at an angle of 35°.

Tintinnopsella turgicarpathica n. sp.
(Code: Tcuc. Registration No.: MP-16)

Derivatio nominis: reference to its relationship with the species *T. carpathica* and the blown-up (= *turgidus*) shape of the lorica.

Holotypus: Plate II, 3 and Table 1, 14. Sample: 85-54-2/62, negative: 88/4/28.

Locus typicus: Magyaregregy.

Stratum typicum: Valanginian.

Description: big-sized, elongated, thin-walled form. The lorica is the widest below the centre line; it becomes gradually and fairly considerably narrower towards the oral opening. The aboral end is widely rounded. As a consequence, its shape resembles a blown-up balloon. The collar is well developed, asymmetrical, bending gently

upwards after a slight sinistral thickening; dextrally after a double angle it points horizontally outwards, standing a bit deeper. The oral opening is relatively narrow. (Remark by the reviewer: the collar joins the lorica through a long, right neck.)

Tintinnopsella gracilicarpatica n. sp.
(Code: Tgc. Registration No.: J.10844)

Derivatio nominis: reference to its relationship with the species *T. carpathica* and the elegant (= *gracilis*) shape of the lorica.

Holotypus: Plate I, 15 and Table 1, 15. Sample: 67-1/8, negative: 84/32/33.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: small-size, thin-walled form with medium-size oral opening. The lorica is the widest at the upper 1/3, the aboral end is almost pointed, weakly rounded. The collar joins the lorica with a gentle bend, it stands at about 45° outwards and is medium developed.

Tintinnopsella isocarpatica n. sp.
(Code: Tic. Registration No.: J. 10845)

Derivatio nominis: reference to its isometric shape and to its relationship with the species *T. carpathica*.

Holotypus: Plate I, 17 and Table 1, 16. Sample: 67-1/24a, negative: 84/22/15.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: an only slightly elongated form of small to medium size, with medium-size oral opening. The lorica is the widest at the upper 1/4, it gets narrower to the lower 1/3 gently, then more abruptly and bended. The aboral end is pointed, the collar joins the lorica that gets narrower at the oral opening at almost right angle, and its end is turned upwards.

Tintinnopsella laticarpatica n. sp.
(Code: Tlac. Registration No.: J. 10841)

Derivatio nominis: reference to its relationship with the species *T. carpathica* and to the large (= *latus*) lorica.

Holotypus: Plate II, 2 and Table 1, 17. Sample: Tb-2/18, negative: 84/33/2.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: big, elongated form, with relatively very large oral opening. The lorica is the widest at its lower 1/3, therefrom it gets narrower, gently to the oral opening, and with a strong, but continuous bend to the aboral end. The aboral end is rounded. The collar is fairly developed, stands dextrally upright, with its end gently turned upwards; sinistrally it is oriented slightly downwards.

Tintinnopsella perlonga n. sp.
(Code: Tpl. Registration No.: J. 10840)

Derivatio nominis: reference to its relationship with the species *T. longa* and to its very elongated shape.

Holotypus: Plate II, 5 and Table 1, 18. Sample: Szv-Ir/1, negative: 84/33/10.

Locus typicus: Mázaszászvár.

Stratum typicum: Valanginian.

Description: a very big-size, strongly elongated form. The walls of the lorica from the oral opening to the lower 1/5 part are subparallel. Therefore by closing arcuately they constitute the aboral end. The collar is well developed. It starts subhorizontally, then turns upwards with a gentle bend.

***Lorenziellopsis* n. g.**

Species typica: *Lorenziellopsis arcuata* n. sp.

Derivatio nominis: in honour of TH. LORENZ, at the same time referring to the relationship with the genus *Lorenziella*.

Diagnosis: small-sized, elongated forms with medium-developed shoulder and pointed aboral end. The collar is very underdeveloped, its wall is thinner than that of the lorica; it joins the lorica with a gentle bend, is slightly convex towards the oral opening, then it turns somewhat outwards.

Lorenziellopsis arcuata n. sp.
(Code: Lsa. Registration No.: MP-7)

Derivatio nominis: referring to the arcuate shape of the lorica.

Holotypus: Plate I, 7 and Table 1, 19. Sample: 63-39/49, negative: 84/22/15.

Locus typicus: Hosszúhetény.

Stratum typicum: Valanginian.

Description: small to medium sized, elongated form, slightly thicker-walled than the average. The lorica is the widest in the region below the collar, therefrom it gets narrower, gently bending, slowly to the lower third part, then faster. The aboral end is almost pointed. The collar is extremely underdeveloped, after a small bend (convex towards the interior) it turns outwards, under an angle of about 70°. The oral opening is narrow.

Lorenziellopsis compactilis n. sp.
(Code: Lsc. registration No.: MP-8)

Derivatio nominis: reference to the stocky (= *compactilis*) lorica.

Holotypus: Plate I, 8 and Table 1, 20. Sample: 85-54-2/71, negative: 8/3/32.

Locus typicus: Magyaregregy.

Stratum typicum: Valanginian.

Description: small to medium sized, slightly elongated, thin-walled form. The lorica is the widest below the collar, therefrom the walls are subparallel to the lower third part, then with a remarkable angle they bend to the aboral end. The collar is of medium size and growing thinner. After a gentle arc (convex toward the interior) it bends with about 60° outwards. The oral opening is of medium size.

Lorenziellopsis mucronata n. sp.

(Code: Lsm. Registration No.: MP-9)

Derivatio nominis: reference to the sharp-ended (= *mucronatus*) lorica.

Holotypus: Plate I, 9 and Table 1, 21 Sample: 85-54-2/62, negative: 8/3/29.

Locus typicus: Magyaregregy.

Stratum typicum: Valanginian.

Description: small to medium-sized, elongated form, with slightly thicker wall than the average. The lorica is the widest at its upper 1/7 part, it gets narrower upwards only a little, and downwards continuously, gently arcuated, to the pointed aboral end. The collar is very underdeveloped, hardly discernible. The oral opening is narrow.

Lorenziellopsis dilatata n. sp.

(Code: Lsd. Registration No.: MP-10)

Derivatio nominis: reference to the elongated (= *dilatatus*) lorica.

Holotypus: Plate I, 10 and Table 1, 22 Sample: 85-54/83, negative: 88/4/2.

Locus typicus: Magyaregregy.

Stratum typicum: Valanginian.

Description: small to medium-sized, elongated, thin-walled form. The lorica is the widest at the upper 1/3, and gets continuously narrower towards both ends. The aboral end is almost pointed. The collar is underdeveloped, sinistrally it turns outwards with an angle of about 45°, with a bend that is convex towards the interior; dextrally the bend is a bit broken. The oral opening is narrow.

Lorenziellopsis suprata n. sp.

(Code: Lssl. Registration No.: MP-11)

Derivatio nominis: reference to the fact that the lorica is large (= *latus*) at its upper (= *superior*) part.

Holotypus: Plate I, 11 and Table 1, 23. Sample: 85-54-2/87, negative: 88/4/6.

Locus typicus: Magyaregregy.

Stratum typicum: Valanginian.

Description: small to medium-sized, gently elongated form with a wall slightly thicker than the average. The lorica is the widest just below the oral part, therefrom it gets narrower to the lower 1/3 slowly, then abruptly, to the almost

pointed aboral end. The collar is very underdeveloped, hardly discernible. The oral opening is of medium size.

Calpionellopsis (COLOM, 1948)

Calpionellopsis pusilloblonga n. sp.

(Code: Cpspuo. Registration No.: MP-19)

Derivatio nominis: reference to its relationship with the species *C. oblonga* and to its tiny (= *pusillus*) size.

Holotypus: Plate II, 8 and Table 1, 24 Sample: 85-54/53, negative: 88/3/23.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: very small-sized, elongated form. The lorica is the widest at its lower 1/5 part, therefrom it grows rapidly narrower to the aboral end. Towards the oral opening the walls are converging almost steadily, but rather weakly. No collar is discernible, the oral opening is narrow.

Calpionellopsis fusoblonga n. sp.

(Code: Cpsfuso. Registration No.: MP-20)

Derivatio nominis: reference to its relationship with the species *C. oblonga* and to the spindle (= *fusus*) shaped lorica.

Holotypus: Plate: II, 9 and Table 1, 25. Sample: 85-54-2/27, negative: 87/12/18.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: small to medium-sized, slightly elongated, fairly thick-walled form. The lorica is the widest at the centre line, wherefrom it grows narrower continuously and with almost identical bend towards both ends. The aboral end is almost pointed, only slightly rounded. Towards the oral opening the wall becomes thinner from the interior, the poorly developed, superimposed collar appears as a detached part of the wall. The oral opening is narrow.

Calpionellopsis parvifusoblonga n. sp.

(Code: Cpspvfuso. Registration No.: MP-21)

Derivatio nominis: reference to its relationship with the species *C. oblonga*, as well as to the small (= *parvus*) and spindle-shaped (= *fusiformis*) lorica.

Holotypus: Plate II, 10 and Table 1, 26. Sample: Pv-V, negative: 88/4/19.

Locus typicus: Pécsvárad.

Stratum typicum: Berriasian.

Description: small, thick-walled, elongated form. The lorica attains its maximum width at the centre line, therefrom it gets narrower with identical bend to both ends. The aboral end is almost pointed, only slightly rounded. The wall gets thicker from inside at the upper third, but it gets

abruptly thin towards the oral opening. No collar is visible. The oral opening is narrow.

Calpionellopsis perovoblonga n. sp.
(Code: Cpspovo. Registration No.: MP-22)

Derivatio nominis: reference to the relationship with the species *C. oblonga* and to the markedly oval shape of the lorica.

Holotypus: Plate II, 11 and Table 1, 27. Sample: 85-54-2/46, negative: 88/2/17.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: small to medium-sized, slightly elongated, thick-walled form. The lorica is the widest at the centre line, therefrom it grows narrower towards both ends with identical, strong bend. The aboral end is somewhat rounded, the wall gets narrower there. In the prolongation of the wall a weak, superimposed collar is discernible. The oral opening is narrow.

Calpionellopsis breviovoblonga n. sp.
(Code: Cpsbovo. Registration No.: MP-23)

Derivatio nominis: reference to the relationship with the species *C. oblonga*, and to the oval and short (= *brevis*) lorica.

Holotypus: Plate III, 6 and Table 1, 28 Sample: 85-54-2/52, negative: 88/3/22.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: small to medium-sized, slightly elongated, thick-walled form. The lorica is widest at the centre line, therefrom it gets narrower towards the oral opening weakly, towards the aboral end with a strong bend. The aboral end is rounded, getting thinner. The lorica has a weak, superimposed collar. The oral opening is fairly large.

Calpionellopsis ovoblonga n. sp.
(Code: Cpsovo. Registration No.: MP-24)

Derivatio nominis: reference to the relationship with the species *C. oblonga* and to the oval shape of the lorica.

Holotypus: Plate III, 2 and Table 1, 29. Sample: 85-54-2/36, negative: 88/3/11.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: elongated form of medium size. The lorica is the widest at the centre line; therefrom it grows narrower towards both ends. The aboral end is largely rounded. The collar is hardly discernible. The oral opening is of medium size.

Calpionellopsis hebeplanoblonga n. sp.
(Code: Cpsheplo. Registration No.: MP-25)

Derivatio nominis: reference to the relationship with the species *C. oblonga*, as well as to the blunt (= *hebes*) aboral end and the flat (= *planus*) shape of the lorica.

Holotypus: Plate III, 3 and Table 1, 30. Sample: 85-54-2/41, negative: 87/13/26.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: elongated form of medium size. The lorica is the widest at the centre line, therefrom the walls converge, very gently bended, towards the oral opening, and they proceed towards the aboral end with a gentle bend in the beginning, later more expressed. The aboral end is bluntly rounded, thinning. Presence of a collar is uncertain. The oral opening is of medium size.

Calpionellopsis planoblonga n. sp.
(Code: Cpsplo. Registration No. MP-26)

Derivatio nominis: reference to the relationship with the species *C. oblonga* and to the flat (= *planus*) lorica.

Holotypus: Plate III, 4 and Table 1, 31 . Sample: 85-54-2/45, negative: 88/3/16.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: medium-sized, elongated form. The maximum width of the lorica is at the centre line. From there, the walls converge in almost right line towards the oral opening, and they get strongly narrower towards the very gently rounded aboral end. Presence of a collar is uncertain, only a pale, small right-side patch suggests it. The oral opening is of medium size.

Calpionellopsis grandiplanoblonga n. sp.
(Code: Cpsgplo. Registration No.: MP-27)

Derivatio nominis: reference to the relationship with the species *C. oblonga*, as well as to the big (= *grandis*) size and flat (= *planus*) shape of the lorica.

Holotypus: Plate III, 5 and Table 1, 32. Sample: Pv-V, 2009, negative: 88/4/20.

Locus typicus: Pécsvárad.

Stratum typicum: Berriasian.

Description: big to medium-sized, slightly thick-walled, elongated form. The lorica is the widest somewhat above the centre line, therefrom the walls gently converge towards the oral opening. Narrowing is continuous towards the poorly rounded, almost pointed aboral end. A small-size superimposed collar is discernible at the end of the wall that gets considerably thinner from inside. The oral opening is narrow.

Calpionellopsis robustoplanoblona n. sp.
(Code: Cpsrpl. Registration No.: MP-28)

Derivatio nominis: reference to the relationship with the species *C. oblonga*, to its robust (= *robustus*) shape and to the flat (= *planus*) lower part of the lorica.

Holotypus: Plate III, 1 and Table 1, 34. Sample: 85-54-2/60, negative: 88/3/24.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: big to medium-sized, gently thin-walled, elongated form. Its greatest width is a little below the centre line. Therefrom it grows narrower towards the oral opening with a gentle, towards the aboral end with a stronger bend. The aboral end is weakly rounded. At the oralia the wall gets thinner outside and inside as well. No collar is visible. The oral opening is fairly narrow.

Calpionellopsis parvibrevoblona n. sp.
(Code: Cpsvbo. Registration No.: MP-30)

Derivatio nominis: reference to the relationship with the species *C. oblonga*, as well as to the small (= *parvus*) and short (= *brevis*) lorica.

Holotypus: Plate III, 8 and Table 1, 35. Sample: 85-54-2/52, negative: 88/3/21.

Locus typicus: small-sized, isometric form. The lorica is the widest at the centre line, it converges very gently towards the oral opening, while it passes with a marked bend to the slightly rounded aboral end. The end of the wall is cut off inwards, in the slot a superimposed collar is visible. The oral opening is of medium size.

Calpionellopsis brevoblona n. sp.
(Code: Cpsbo. Registration No.: MP-31)

Derivatio nominis: reference to its relationship with the species *C. oblonga* and to the short (= *brevis*) lorica.

Holotypus: Plate III, 7 and Table 1, 36. Sample: 85-54-2/39, negative: 88/3/13.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: big to medium-sized, elongated form. The wall is fairly thick, but it grows thinner at the gently rounded aboral end. The lorica is the widest at its lower 2/5 part, the walls are slightly converging, in a straight line, to the oral opening. There is a poorly developed collar in the prolongation of the wall. The oral opening is fairly narrow.

Calpionellopsis cuspidbrevoblona n. sp.
(Code: Cpscubo. Registration No.: MP-32)

Derivatio nominis: reference to the relationship with the species *C. oblonga*, as well as to the pointed (= *cuspidatus*) and short (= *brevis*) lorica.

Holotypus: Plate III, 9 and Table 1, 38. Sample: 85-54-2/41, negative: 88/3/14.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: small to medium-sized, slightly elongated form. The lorica is the widest at the centre line, therefrom it converges towards the oral opening very gently. Downwards to the lower third it gets narrower gently, then with a marked bend to the almost sharply pointed aboral end. The lower fourth of the wall has been thinned, while its upper third is thickened. At the sinistral end of the wall a superimposed collar can be suspected. The oral opening is of medium size.

Calpionellopsis compoblona n. sp.
(Code: Cpsompo. Registration No.: MP-33)

Derivatio nominis: reference to its relationship with *C. oblonga* and to its compact (= *compactilis*) stature.

Holotypus: Plate III, 9 and Table 1, 38. Sample: 85-54/83, negative: 88/4/9.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian–Valanginian.

Description: small to medium-sized, slightly elongated, very thick-walled form. The walls of the lorica are subparallel to the lower 2/5 part, therefrom they run with a fine bend to the almost pointed aboral end. The lower fourth of the wall has been thinned, while its upper third has been thickened. The end of the wall is cut inwards, in the slot there is a small superimposed collar. The oral opening is of medium size.

Calpionellopsis tholoblona n. sp.
(Code: Cpstho. registration No.: MP-34)

Derivatio nominis: reference to its relationship with the species *C. oblonga*, and to the dome (= *tholus*) shaped lorica.

Holotypus: Plate III, 10 and Table 1, 39. Sample: 85/54/26, negative: 88/4/30.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: medium-sized, elongated form. The wall grows gradually thicker downwards, the lower part of the lorica is filled up with calcisparite. The lorica is the widest a little below its centre line, it gets perceptibly narrower towards the oral opening. The aboral end is dome-shapedly rounded. Although the dextral end of the wall has been thinned inside, no collar is visible. The oral opening is narrow.

Calpionellopsis belloblona n. sp.
(Code: Cpsbello. Registration No.: MP-35)

Derivatio nominis: reference to its relationship with the species *C. oblonga* and to the nice (= *bellus*) look of the lorica.

Holotypus: Plate II, 13 and Table 1, 40. Sample: 67-1/133, negative: 88/4/15.

Locus typicus: medium-size, elongated form. The lorica is the widest at the lower third. The walls converge strongly towards the oral opening, downwards after a strong bend they continue with a continuous arc to the weakly rounded aboral end. The ends of the wall are cut inwards at an angle of about 60°, in their prolongation small superimposed collars are visible. The oral opening is narrow.

Calpionellopsis venoblonga n. sp.
(Code: Cpsveno. Registration No.: MP-36)

Derivatio nominis: reference to its relationship with the species *C. oblonga* and to the graceful (= *venustus*) aspect of the lorica.

Holotypus: Plate III, 14 and Table 1, 41. Sample: 85-54/45, negative: 88/3/15.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: big to medium-sized, elongated form. The wall is slightly thicker than the average, but it gets strongly narrower at the aboral end. The lorica is the widest below its lower third part, the walls converge gently towards the oral opening, running into the slightly rounded aboral end with a gentle bend. The ends of the walls are cut inwards, in the slot there is a small superimposed collar. The oral opening is of medium size.

Calpionellopsis graciloblonga n. sp.
(Code: Cpsgracilo. Registration No.: MP-37)

Derivatio nominis: reference to its relationship with the species *C. oblonga* and to the graceful (= *gracilis*) look of its lorica.

Holotypus: Plate IV, 1 and Table 1, 42. Sample: 63-39/39, negative: 88/4/16.

Locus typicus: Hosszúhetény.

Stratum typicum: Berriasian.

Description: big to medium-sized, strongly elongated form. The wall thins out strongly at the aboral end. The lorica is the widest above the lower third part of the lorica. The walls converge slightly towards the oral opening; downwards, turning abruptly conical, they arrive with a gentle bend to the very slightly rounded aboral end. The wall ends are cut inwards at an angle of about 35°. No collar is visible. The oral opening is narrow.

Calpionellopsis promoblonga n. sp.
(Code: Cpspromo. Registration No.: MP-38)

Derivatio nominis: reference to its relationship with the species *C. oblonga* and to the long-grown (= *promissus*) lorica.

Holotypus: Plate IV, 2 and Table 1, 43. Sample: 85-54/72, negative: 88/3/9.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian–Valanginian.

Description: big-sized, strongly elongated, somewhat thick-walled form. The lorica is the widest at its lower third part, the walls are very weakly converging towards the oral opening, downwards they reach the almost pointed aboral end with a continuous bend. No collar is visible. The oral opening is narrow.

Calpionellopsis vincoblonga n. sp.
(Code: Cpsvinco. Registration No.: MP-39)

Derivatio nominis: reference to its relationship with the species *C. oblonga* and to the noose-shaped (*vinculus* = noose) lorica.

Holotypus: Plate IV, 3 and Table 1, 44. Sample: 85-54-2/50, negative: 88/3/20.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: big-sized, elongated form. The lorica is the widest at its lower third part, the walls therefrom converge very markedly, after a gentle transitional bend, towards the oral opening. The aboral end closes with a continuous arc, noose-shaped. A superimposed collar is very weakly visible. The oral opening is narrow.

Calpionellopsis grandinlatoblonga n. sp.
(Code: Cpsginlo. Registration No.: MP-40)

Derivatio nominis: reference to its relationship with the species *C. oblonga*, as well as to its big (= *grandis*) size and to the large lower part (= *inferior latus*) of the lorica.

Holotypus: Plate IV, 4 and Table 1, 45. Sample: 63-39/41, negative: 88/4/10.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: big-sized, elongated form. The lorica is the widest at its one-fifth part. The walls converge considerably towards the oral opening; downwards they bend rapidly over to form the widey-flatly rounded aboral end. On the right side a weakly developed superimposed collar is visible. The oral opening is narrow.

Calpionellopsis conohastoblonga n. sp.
(Code: Cpscoho. Registration No.: MP-41)

Derivatio nominis: reference to its relationship with the species *C. oblonga*, as well as to the conical (= *conicus*) and lance (= *hasta*)-shaped lorica.

Holotypus: Plate IV, 5 and Table 1, 46. Sample: 85-54-2/74, negative: 88/3/35.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: medium-sized, elongated form. The lorica is the strongest at its lower third part, therefrom it

converges very slightly. The walls in the beginning are bended with a gentle arc towards the pointed aboral end, then they converge into a straight-lined cone. No collar is visible. The oral opening is narrow.

Calpionellopsis hastoblunga n. sp.
(Code: Cpsho. Registration No.: MP-42)

Derivatio nominis: reference to its relationship with the species *C. oblonga* and to its lance (= *hasta*) shaped lorica.

Holotypus: Plate IV, 6 and Table 1, 47. Sample: 85-54-2/62, negative: 88/3/30.

Locus typicus: Magyaregregy.

Stratum typicum: Valanginian.

Description: big to medium-sized, elongated form. The lorica is the widest at its lower third part, therefrom it gets narrower with a prolonged bend to the almost sharply pointed aboral end. The walls slightly converge upwards, at the oral opening along a short section they get thinner from inside. A very weak superimposed collar is discernible. The oral opening is narrow.

Calpionellopsis parvihastoblunga n. sp.
(Code: Cpsvho. Registration No.: MP-43)

Derivatio nominis: reference to its relationship with the species *C. oblonga*, as well as to the small (= *parvus*) and lance (= *hasta*) shaped lorica.

Holotypus: Plate IV, 7 and Table 1, 48. Sample: 85-54-2/84, negative: 88/4/3.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian–Valanginian.

Description: small to medium-sized, elongated form. The lorica is the widest at the lower third part, therefrom the walls weakly converge upwards, in the upper 1/5 part they get slightly thicker from inside. There is a prolonged transition to the almost sharply pointed aboral end. The superimposed collar is very weakly visible. The oral opening is narrow.

Calpionellopsis latihastoblunga n. sp.
(Code: Cpslho. Registration No.: MP-44)

Derivatio nominis: reference to its relationship with the species *C. oblonga*, as well as to the large (= *latus*) and lance (= *hasta*) shaped lorica.

Holotypus: Plate IV, 8 and Table 1, 49. Sample: 85-54-2/86, negative: 88/4/4.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian–Valanginian.

Description: medium-shaped, elongated form. The lorica is the widest at its lower one-fourth part, therefrom it grows narrower with a gentle bend to the almost

sharply pointed aboral end. Upwards the walls converge very weakly, in their prolongation a weakly superimposed collar appears. The oral opening is of medium size.

Calpionellopsis tenuhastoblunga n. sp.
(Code: Cpsteho. Registration No.: MP-45)

Derivatio nominis: reference to the relationship with the species *C. oblonga*, as well as to the thin (= *tenuis*) and lance (= *hasta*) shaped lorica.

Holotypus: Plate IV, 9 and Table 1, 50. Sample: 85-54-2/73, negative: 88/3/34.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian–Valanginian.

Description: medium-sized, strongly elongated form. The walls run parallelly to the lower third part, therefrom they continue with a prolonged bend to the almost pointed aboral end. In the prolongation of the wall a very weak superimposed collar is visible. In the upper one-seventh part the wall gets thinner from inside. The oral opening is narrow.

Calpionellopsis brevihastoblunga n. sp.
(Code: Cpsbho. Registration No.: MP-46)

Derivatio nominis: reference to its relationship with the species *C. oblonga*, as well as to the short (= *brevis*) and lance (= *hasta*) shaped lorica.

Holotypus: Plate IV, 10 and Table 1, 51. Sample: 85-54-2/72, negative: 88/3/33.

Locus typicus: Magyaregregy.

Stratum typicum: Valanginian.

Description: small to medium-sized, slightly elongated form. The lorica is the widest a little below the centre line. It converges gently upwards, bending with a fine arc to the pointed aboral end. No collar is visible. The oral opening is of medium size.

Calpionellopsis peracutihastoblunga n. sp.
(Code: Cpspaho. Registration No.: MP-47)

Derivatio nominis: reference to the relationship with the species *C. oblonga*, to the very sharply pointed (= *peracutus*) and lance (= *hasta*) shaped lorica.

Holotypus: Plate IV, 11 and Table 1, 52. Sample: 85-54-2/62, negative: 88/3/31.

Locus typicus: Magyaregregy.

Stratum typicum: Valanginian.

Description: small to medium-sized, elongated form. The lorica is the widest at the centre line, the walls upwards converge markedly, running into the almost pointed aboral end with a very gentle bend, almost conically. No collar is visible.

Table 1 — 1. táblázat

	Code Kód	Length Hossz	Width Szélesség	Oral Orális nyílás		Code Kód	Length Hossz	Width Szélesség	Oral Orális nyílás
1	Cha	66	52	35	29	Cpsovo	72	41	30
2	Cpua	33	33	18	30	Cpsheplo	74	40	29
3	Ccc	61	41	25	31	Cpsplo	74	39	29
4	Ccp	34	31	16	32	Cpsgplo	88	40	28
5	Sl	60	41	26	33	Cpsrplo	87	47	30
6	Smi	42	31	18	34	Cpsgovo	89	46	30
7	Bg	62	40	24	35	Cpspvbo	52	38	29
8	Bl	60	47	29	36	Cpsbo	78	40	30
9	Tcoc	92	60	44	37	Cpscubo	87	41	27
10	Tcc	72	48	34	38	Cpscompo	79	40	27
11	Tbc	80	54	43	39	Cpstho	96	43	29
12	Tpbc	76	62	46	40	Cpsbello	88	43	28
13	Tlc	108	56	44	41	Cpsveno	93	46	30
14	Ttuc	100	61	40	42	Cpsgracilo	100	42	30
15	Tgc	66	44	30	43	Cpspromo	108	37	28
16	Tic	70	48	36	44	Cpsvinco	98	50	30
17	Tlac	106	62	48	45	Cpsginlo	110	58	32
18	Tpl	160	52	38	46	Cpscoho	98	38	22
19	Lsa	68	38	25	47	Cpscho	92	40	30
20	Lsc	57	38	27	48	Cpspvho	80	36	25
21	Lsm	75	38	25	49	Cpslho	86	40	30
22	Lsd	68	39	28	50	Cpsteho	91	37	29
23	Lssl	60	42	30	51	Cpsbho	80	40	25
24	Cpspuo	62	31	22	52	Cpspaho	85	35	23
25	Cpsfuso	65	43	29	53	Cpstuhho	96	37	25
26	Cpspvfuso	52	35	22	54	Cpsshho	56	31	21
27	Cpspovo	65	43	28	55	Cpsobes	81	59	44
28	Cpsbovo	55	38	24					

Calpionellopsis tumohastoblonga n. sp.
(Code: Cpsstuhho Registration No.: MP-48)

Derivatio nominis: reference to its relationship with the species *C. oblonga*, to the swell (= *tumor*) of the aboral end and to the lance (= *hasta*) shaped lorica.

Holotypus: Plate IV, 12 and Table 1, 53. Sample: Pv-V.2010, negative: 88/4/21.

Locus typicus: Pécsvárad.

Stratum typicum: Berriasian–Valanginian.

Description: medium-sized, elongated, slender form. The lorica is the widest at the lower third part. Upwards the walls converge slightly, downwards after a gentle bend they converge at a sharp angle and finally meet in the swelling which is less than one tenth of the total size. No collar is visible. The oral opening is narrow.

Calpionellopsis semihumiloblonga n. sp.
(Code: Cpsshho. Registration No.: MP-18)

Derivatio nominis: reference to its very close relationship with the species *C. humiloblonga* (*semi* = half).

Holotypus: Plate II, 7 and Table 1, 54. Sample: 65-54/48, negative: 88/3/19.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: very small-sized, slightly elongated form. At its middle third part the wall gets thicker from inside, elsewhere it is thin. The lorica is the widest at its lower one-third part, and runs into the gently rounded aboral end with a strong bend. The walls converge straightly towards the oral opening. No collar is visible. The oral opening is narrow.

Paracalpionellopsis n. g.

Species typica: *Calpionellopsis humiloblonga* NAGY, 1986

Derivatio nominis: reference to conformity with some important features of the genus *Calpionellopsis* and to the deviation in one essential one.

Diagnosis: forms with elongated lorica, with the greatest width at the middle, wherefrom the lorica grows gradually narrower towards the oralia. The collar is situated in direction of the wall and its optical behaviour is identical with that of the forms of the genus *Calpionellopsis*.

Paracalpionellopsis obesisimplex n. sp.
(Code: Cpsobes. Registration No.: MP-17)

Derivatio nominis: reference to its similarity with the species *Cps. simplex* and to its thick lorica (*obesitas* = fatness).

Holotypus: Plate II, 6 and Table 1, 55. Sample: 85-54/36, negative: 88/3/12.

Locus typicus: Magyaregregy.

Stratum typicum: Berriasian.

Description: big-sized, elongated, oval-contoured form. The lorica is the widest at its centre line, therefrom it gets narrower towards both ends with gentle bend. The walls are bent inwards at the upper part, and display an arcuated furrow inside. In the slot is sitting the superimposed collar, which is medium-developed and oriented parallel with the end of the wall of the lorica. The aboral end is rounded. The oral opening is of medium size.

Recommendations

1. During the detailed investigations started in 1984 at first 27 new species were described (NAGY 1986), then — in the present paper — 55 new species more, altogether 82 new species. With the help of these, 54 biozones have been established (Table 2).

2. For further detailed studies and species descriptions taxonomic studies are required. For the classification of the Jurassic–Cretaceous Calpionellides I recommend the following:

2.1. The basic criteria of classification should be:

- first order: the substance and make-up of the wall,
- second order: build-up of the oralia,
- third order: the make-up of the lorica.

2.2. In the make-up of the wall the following grades can be distinguished, from the dark-coloured (made up originally of organic matter) to the light-coloured, opalising hyaline-calcite lorica:

1. *Chitinoidella*, *Deflandronella*;
2. *Parachitinoidella*;
3. “brz” n. g. (see item 2.5);
4. *Praetintinopsella*;
5. “brnn” n. g. (see item 2.5);
6. “w” n. g (see item 2.5);
7. *Calpionella*.

2.3. Groups distinguished according to the make-up of the oralia:

1. Collar connected with the lorica: *Calpionella*, *Crassicollaria*, *Tintinnopsella*, *Lorenziella*;

2. One-element superimposed (eventually juxtaposed) oral structure: *Calpionellopsis*;

3. Two-element superimposed oral structure: *Remaniella*, n. g. 14*, n. g. 15* (see item 2.5);

4. Two-element (eventually three-element) juxtaposed oral structure: *Praecalpionellites*;

5. Unambiguously juxtaposed oral structure: *Calpionellites*, n. g. 13* (see item 2.5).

2.4. For the taxonomical description, a combinative system of the features and the technical terms have to be established.

2.5. The application of the features enumerated under items 2.1 to 2.3 justifies the distinction of 3 superfamilies, 9 families and 9 subfamilies within the suborder Calpionellina, indicating the type species as see Table 3.

It is remarkable that the number of taxa is increasing in the succession of appearance of the superfamilies (Table 4).

3. It can be considered as a fine example of convergence that the basic types appear again and again in the Calpionella groups succeeding to each other.

4. The taxonomical and biostratigraphical study of the lowermost calpionella-bearing sections can be performed only after the investigation and sampling of the appropriate geological sections, as well as after the preparation of thin sections. Results may be expected from the study of 4–5 geological sections. However, some statements can be made even right now.

4.1. Out of the “w” forms, the suplates are the oldest, the inflates are younger, the subtiles even more younger, and the mucronates are the youngest.

4.2. The range of “*Tintinnipsella remanei*” coincides with the akme of the “w” forms, their early variety may belong to the genus “brn”, while the late one to the genus “w”.

4.3. The forms grandalpina – longalpina – gigalpina seem to belong to the range of the following genera (in the succession of their appearance):

— “vg”: around the middle of the akme of “w”

— “w”: at the beginning of the range of *Crassicollaria*

— *Calpionella*: in the later part of the range of *Crassicollaria*.

5. The sections evidencing the phenomena of revolution and evolution would require especially careful study. This should involve the entire spectrum, including the picofauna. To study only the spectacular specimens is already out of date.

5.1. Revolution is characterized by high species number and short hemeras (species ranges), e.g. *Calpionella longalpina*, *Sopianella*, *Crassicalpionella pusilla*.

5.2. Evolution can be hardly documented even in the most obvious cases, such as *Calpionella alpina* – *C. brevelliptica* – *C. parvelliptica* – *C. elliptica*, or *Remaniella dadayi* – *Praecalpionellites murgeanui* – *Calpionellites darderi*.

Table 2 — 2. táblázat

Age*			ROMA STANDARD ZONES	Remane	*85HM. Z.	*88HM-2 Zone					
			Sümege subzones	Vocont. Z.	(Nagy 1986)	No	Index foss.				
CRETACEOUS	NEOCOMIAN	VALANGINIAN	CALPIONELLITES	E	22–19	54	<i>Ct. darderi</i>				
			BERRIASIAN	RYAZANIAN	oblonga	D3	18	53	<i>Pc. murgeanui</i>		
								17	52	<i>T. perlonga</i>	
									51	<i>T. turgicarpathica</i>	
									50	<i>T. perbrevicarpathica</i>	
									49	<i>T. brevicarpathica</i>	
									48	<i>Ls. arcuata</i>	
		47							<i>L. hungarica</i>		
		JURASSIC	MALM	VOLGIAN	CALPIONELLOPSIS	D2	16	46	<i>Cps. tumohastoblonga</i>		
								15	45	<i>Cps. hastoblonga</i>	
									44	<i>Cps. conohastoblonga</i>	
									14	43	<i>Cps. conoblonga</i>
										42	<i>Cps. pusilloblonga</i>
										41	<i>Cps. oblonga</i>
	40									<i>Cps. venoblonga</i>	
	TITHONIAN			UPPER	simplex	D1	12	39	<i>Cps. humiloblonga</i>		
								38	<i>Cps. acutoblonga</i>		
								13	37	<i>Cps. planoblonga</i>	
									36	<i>Cps. crassoblonga</i>	
									35	<i>Cps. protoblonga</i>	
								5	34	<i>Cps. brevoblonga</i>	
									33	<i>Cps. oblosimplex</i>	
	32	<i>Cps. breviclaroblonga</i>									
	31	<i>Cps. brevisimplex</i>									
	VOLGIAN	MIDDLE	CALPIONELLA	C	8	30	<i>Cps. procerosimplex</i>				
						29	<i>Cps. simplex</i>				
						9	28	<i>Lt. venustus</i>			
							27	<i>C. latalpina</i>			
4						26	<i>C. elliptica</i>				
						25	<i>C. globalpina</i>				
						24	<i>C. parvelliptica</i>				
	23	<i>C. grandalpina</i>									
	22	<i>C. brevelliptica</i>									
TITHONIAN	UPPER	intermedia	A3	3	21	<i>S. longa</i>					
					20	<i>T. carpathica</i>					
					19	<i>Cc. conica</i>					
					18	<i>R. cadischiana</i>					
					5	17	<i>C. parvalpina</i>				
						16	<i>T. doliphormis</i>				
						15	<i>T. inornata</i>				
						14	<i>Cr. colomi</i>				
					TITHONIAN	UPPER	CRASSICOLLARIA	A2	2	13	<i>C. alpina</i>
										12	<i>Cr. massutiniana</i>
										11	<i>Cr. brevis</i>
10	<i>C. longalpina</i>										
9	<i>T. gracilicarpathica</i>										
8	<i>Cr. parvula</i>										
7	<i>T. crassicarpathica</i>										
TITHONIAN	UPPER	remanei	A1	1	6	<i>Cr. intermedia</i>					
					5	<i>Cr. latintermedia</i>					
					4	<i>T. remanei</i>					
					3	<i>Pt. andrusovi</i>					
TITHONIAN	MIDDLE				2	<i>Ch. boneti</i>					
					1	<i>Ch. dobeni</i>					

* As for the Sümege Convention (Remane et al. 1986) the Jurassic/Cretaceous boundary has to put to the A/B zone boundary as to the best investigable point.

Table 3 — 3. táblázat

subordo		CALPIONELLINA n. so.
superfamilia	1.	DEFLANDRONELLIDEA TREJO, 1976
familia	1.1.	DEFLANDRONELLIDAE TREJO, 1976
genus		<i>Deflandronella</i> (TREJO, 1972) emend. TREJO, 1975
species typica		<i>D. veracruzana</i> (TREJO, 1972)
		<i>Parachitinoidea</i> TREJO, 1972
		<i>P. cuvillieri</i> TREJO, 1972
familia	1.2.	CHITINOIDELLIDAE TREJO, 1976
		<i>Chitinoidea</i> DOBEN, 1963
		<i>Ch. boneti</i> DOBEN, 1963
superfamilia	2.	“brz-IDEA” n. superf.
familia	2.1.	“brz-IDAE” n. f.
	2.1.0.1.	“brz” n. g.*
		“brzf” n. sp.
		<i>Praetintinnopsella</i> BORZA, 1969
		<i>Pt. andrusovi</i> BORZA, 1969
familia	2.2.	SEMICHITINOIDELLIDAE NOWAK, 1978
		<i>Semichitinoidea</i> NOWAK, 1978
		<i>S. sujkowski</i> NOWAK, 1978
familia	2.3.	“w-IDAE” n. f.
subfamilia	2.3.1.	“brn-INAE” n. sf.
	2.3.1.1.	“brn” n. g.
		“brnf” n. sp.
subfamilia	2.3.2.	“w-INAE” n. sf.
	2.3.2.1.	“w” n. g.***
		“ws” n. sp.
	2.3.2.2.	“vg” n. g.****
		“vgv” n. sp.
	2.3.2.3.	“vry” n. g.*****
		“vryr” n. sp.
superfamilia	3.	CALPIONELLIDEA BONET, 1959
familia	3.1.	CALPIONELLIDAE BONET, 1956
subfamilia	3.1.1.	CALPIONELLINAE n. sf.
		<i>Calpionella</i> LORENZ, 1902
		<i>C. alpina</i> LORENZ, 1902
	3.1.1.2.	“subc” n. g.
		“subcac” n. sp.
	3.1.1.3.	“arc” n. g.
		“arca” n. sp.
		<i>Crassicalpionella</i> n. g.
		<i>Cc. conica</i> n. sp.
		<i>Sopianella</i> n. g.
		<i>S. longa</i> n. sp.
		<i>Baranella</i> n. g.
		<i>B. gracilis</i> n. sp.
	3.1.1.7.	“ell” n. g.
		<i>Calpionella elliptica</i> CADISCH, 1932
subfamilia	3.1.2.	CRASSICOLLARIINAE n. sf.
		<i>Crassicollaria</i> REMANE, 1962
		<i>Cr. brevis</i> REMANE, 1962

Table 3 continuation — 3. táblázat folytatás

	3.1.2.2.	n. g. 1. <i>Cr. intermedia</i> (DURAND DELGA, 1957)
	3.1.2.3.	n. g. 2. <i>Cr. parvula</i> REMANE, 1962
	3.1.2.4.	n. g. 3. <i>Cr. latintermedia</i> NAGY, 1986
	3.1.2.5.	n. g. 4. <i>Cr. "crdir"</i> n. sp.
	3.1.2.6.	n. g. 5. <i>Cr. massutiniana</i> (COLOM, 1948)
subfamilia	3.1.3.	TINTINNOPSELLINAE n. sf. <i>Tintinnopsella</i> COLOM, 1948 <i>T. carpathica</i> (MURGEANU et FILIPESCU, 1933)
	3.1.3.2.	n. g. 6. <i>T. turgicarpathica</i> n. sp.
	3.1.3.3.	n. g. 7. <i>T. gracilicarpathica</i> n. sp.
	3.1.3.4.	n. g. 8. <i>T. izocarpathica</i> n. sp.
	3.1.3.5.	n. g. 9. <i>T. laticarpathica</i> n. sp.
	3.1.3.6.	n. g. 10. <i>T. perlonga</i> n. sp.
	3.1.3.7.	n. g. 11. <i>T. doliphormis</i> (COLOM, 1948) <i>Sturiella</i> BORZA, 1981 <i>S. oblonga</i> BORZA, 1981 <i>Lorenziellites</i> NAGY, 1986 <i>L. venustus</i> NAGY, 1986 <i>Lorenziella</i> KNAUER et NAGY, 1963 <i>L. hungarica</i> KNAUER et NAGY, 1963 <i>Lorenziellopsis</i> n. g. <i>Ls. arcuata</i> n. sp. "frct" n. g. "frtfr" n. sp.
familia	3.2.	CALPIONELLOPSIDAE n. f.
subfamilia	3.2.1.	CALPIONELLOPSINAE n. sf. <i>Calpionellopsis</i> COLOM, 1948 <i>Cs. oblonga</i> (CADISCH, 1932)
Note:		
1. A yet not described species is indicated by its code, and the genus based upon it by the corresponding part of the code.		
2. A genus to be based upon a described species is indicated by numerated "n. g.", and the proposed type species bears the name of the valid genus.		
3. Proposed <i>derivations nominis</i> : * in honour of K. BORZA, ** in honour of P. BRÖNNIMANN, *** in honour of J. WANNER, **** in honour of J. VOGLER, ***** in honour of J. VERNIORY, # in honour of B. DARDER, ## in honour of J. CADISCH, ### in honour of J. DADAY.		

5.3. Special attention has to be paid to possible polygeny, e.g. *Calpionellopsis* may have as ancestors *Calpionella elliptica*, *Tintinnopsella carpathica*, and *Remaniella ferasini*. *Calpionella pusillalpina* may develop into *Paracalpionellopsis humiloblona*. The small, short and pointed *Crassicollaria brevis* is the ancestor of the point-

ed *Calpionella alpina*. The *Remaniella ferasini* group is polygenetic, e.g. out of the *Calpionellopsis* species both the thick-walled brevisimplex and the thin-walled procerosimplex have their ancestors in this group.

5.4. Phylogenetically, the *Tintinnopsella* group is by far the most important. It comprises almost all types of

Table 4 — 4. táblázat

subordo CALPIONELLINA

superfamilia	DEFLANDRONELLIDEA	brz-IDEA	CALPIONELLIDEA
familia	1 Deflandronellidae 2 Chitinoideidae	1 brz-idae 2 Semichitinoideidae 3 w-idae	1 Calpionellidae 2 Calpionellopsidae 3 #-idae 4 Colomiellidae
subfamilia		1 brn-inae 2 w-inae	1 Calpionellinae 2 Crassicollariinae 3 Tintinopsellinae 4 Calpionellopsinae 5 Calpionellopsellinae 6 #-inae 7 ##-inae
genus	1 Deflandronella 2 Parachitinoideella 3 Chitinoideella	1 brz* 2 Praetintinopsella 3 Semichitinoideella 4 brn** 5 w*** 6 vg**** 7 vry*****	1 Calpionella 2 subc n. g. 3 arc n. g. 4 Crassicalpionella 5 Sopianella 6 Baranella 7 ell n. g. 8 Crassicollaria 9 n. g. 1 10 n. g. 2 11 n. g. 3 12 n. g. 4 13 n. g. 5 14 Tintinopsella 15 n. g. 6 16 n. g. 7 17 n. g. 8 18 n. g. 9 19 n. g. 10 20 n. g. 11 21 Sturiella 22 Lorenziellites 23 Lorenziella 24 Lorenziellopsis 25 frct n. g. 26 Calpionellopsis 27 Paracalpionellopsis 28 n. g. 12 29 Calpionellopsella 30 #-iella n. g. 13 31 Remaniella 32 ##-iella n. g. 14 33 ###-nella n. g. 15 34 Praecalpionellites 35 Colomiella
Proposed <i>derivationes nominis</i> : * in honour of K. Borza, ** in honour of P. Brönnimann, *** in honour of J. Wanner, **** in honour of J. Vogler, ***** in honour of J. Verniory, # in honour of B. Darder, ## in honour of J. Cadisch, ### in honour of J. Daday.			

wall make-up and it is the ancestor of most of the groups, e.g. out of the *Calionellopsis* of one part of the procerosimplex, of the species protoblonga, conoblonga, ovoblonga, acutoblonga etc., out of the *Calpionellites* of

some *dadayi* and *darderi* types. It is especially surprising that even some of the very small *Paracalpionellopsis humiloblonga* derive from the equally tiny *T. carpathica*.

Irodalom

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MECSEK HEGYSÉGI CALPIONELLIDEÁK VIZSGÁLATA — MÁSODIK RÉSZ

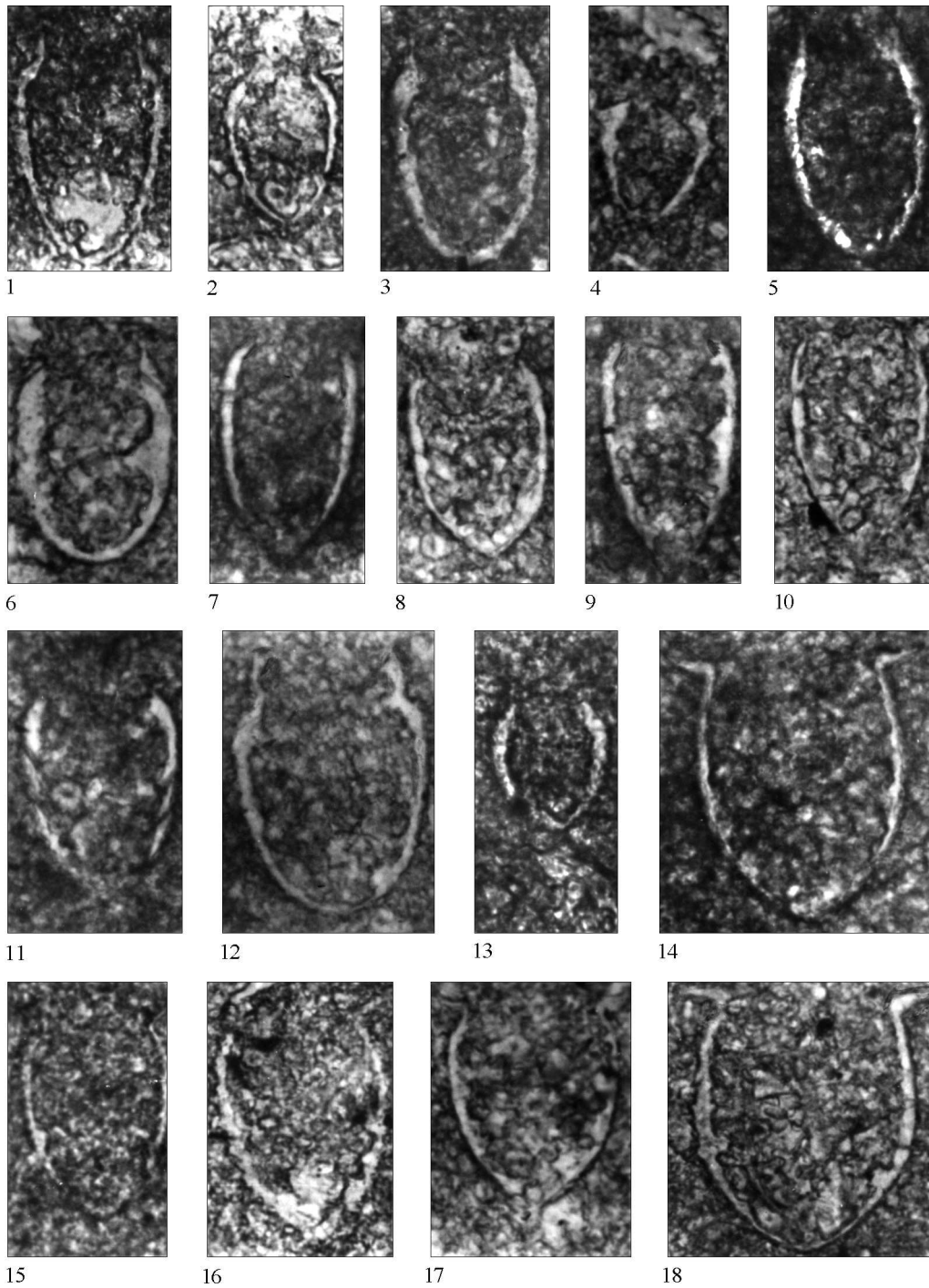
NAGY ISTVÁN*

Magyar Állami Földtani Intézet, 1143 Budapest, Stefánia út 14.

Kulcsszavak: Felső-jura, alsó-kréta, jura-kréta határ, Calpionellidae biosztratigráfia, új taxonok, rendszertan, Dél-Magyarország

Ez a munka új Calpionellidea taxonok korábban megkezdett leírásának (NAGY 1986) folytatása, melynek kézirat 1989-ben készült el, véglegesítése azonban a szerző egészségi állapotának megromlása miatt elmaradt. A csak a legszükségesebbekre szorítkozó taxon leírások közreadásával a szerzőnek az a célja, hogy ezek által lehetőség adódjék a calpionellideás szelvények korábban részletesebb feldolgozására és korrelációjára. Itt 5 új nemzetség és 55 új faj leírását adja, további leírásokra nem kerülhetett sor. Az idézett munkában alkalmazott megoldás folytatásaként itt is közli a taxonok kódját és regisztrációs számát. A fényképek (I–IV. fényképtábla) csak a holotipusokat ábrázolják, amelyek méreteit az 1. táblázat tartalmazza mikrométerben (mikronban) kifejezve. A 2. táblázat a mecseki Calpionellidea zonáció (HM = Hungary, Mecsek) újabb, 54 zónát felölelő provizórikus változatát (88HM-2) mutatja be, amelyben a fellépő új taxonok jelölik ki a zónák határait. A szerző végül közli rendszertani és fejlődéstani megfigyeléseinek összegzését és javaslatait a kérdés további vizsgálatára.

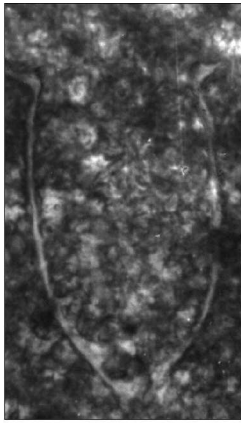
Plate I



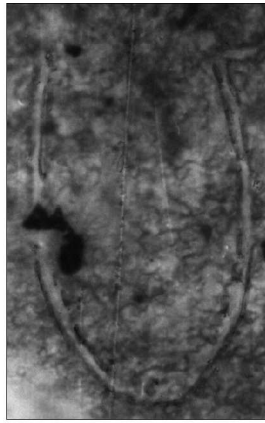
- | | |
|---|--|
| 1. <i>Sopianella longa</i> n. sp. B. | 10. <i>Lorenziellopsis dilatata</i> n. sp. B-V. |
| 2. <i>Sopianella minuta</i> n. sp. B. | 11. <i>Lorenziellopsis supлата</i> n. sp. B-V. |
| 3. <i>Crassicalpionella conica</i> n. sp. B. | 12. <i>Calpionella hebalpina</i> n. sp. B. |
| 4. <i>Crassicalpionella pusilla</i> n. sp. B. | 13. <i>Calpionella pusillalpina</i> n. sp. B. |
| 5. <i>Baranella gracilis</i> n. sp. B. | 14. <i>Tintinnopsella brevicarpathica</i> n. sp. V. |
| 6. <i>Baranella laxa</i> n. sp. B. | 15. <i>Tintinnopsella gracilicarpathica</i> n. sp. B. |
| 7. <i>Lorenziellopsis arcuata</i> n. sp. V. | 16. <i>Tintinnopsella crassicarpathica</i> n. sp. B. |
| 8. <i>Lorenziellopsis compactilis</i> n. sp. B-V. | 17. <i>Tintinnopsella isocarpathica</i> n. sp. B. |
| 9. <i>Lorenziellopsis mucronata</i> n. sp. V. | 18. <i>Tintinnopsella prebrevicarpathica</i> n. sp. V. |

Plate II

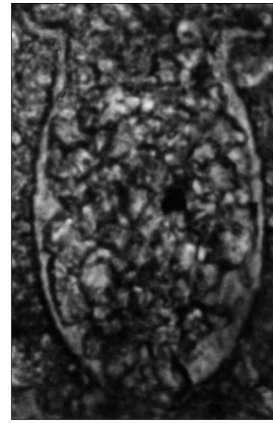
1. *Tintinnopsella longocarpathica* n. sp. B.
2. *Tintinnopsella laticarpathica* n. sp. B.
3. *Tintinnopsella turgicarpathica* n. sp. V.
4. *Tintinnopsella collcarpathica* n. sp. V.
5. *Tintinnopsella perlonga* n. sp. V.
6. *Paracalpionellopsis obesisimplex* n. sp. B.
7. *Calpionellopsis semihumiloblonga* n. sp. B.
8. *Calpionellopsis pusilloblonga* n. sp. B.
9. *Calpionellopsis fusoblonga* n. sp. B.
10. *Calpionellopsis parvifusoblonga* n. sp. B.
11. *Calpionellopsis perovoblonga* n. sp. B.



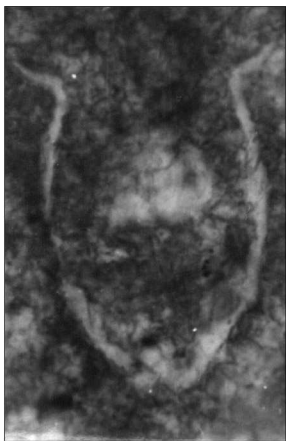
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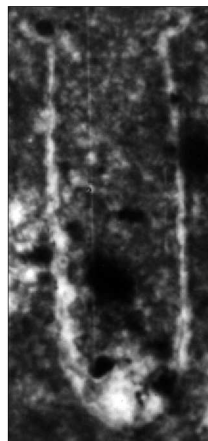
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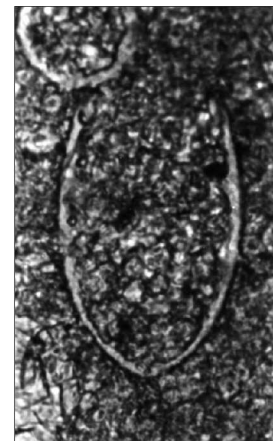
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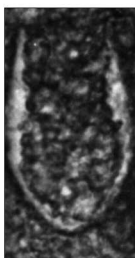
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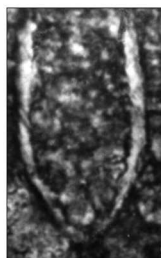
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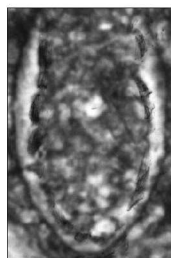
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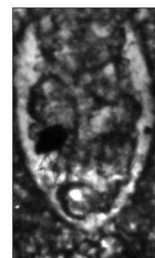
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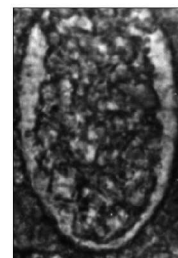
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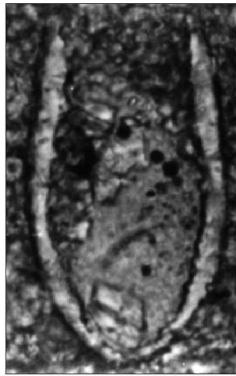
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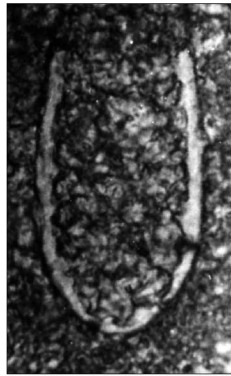
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Plate III

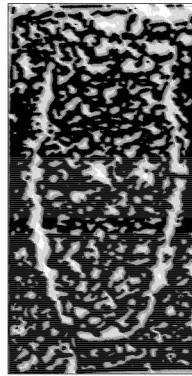
1. *Calpionellopsis grandovoblonga* n. sp. B.
2. *Calpionellopsis ovoblonga* n. sp. B.
3. *Calpionellopsis hebeplanoblonga* n. sp. B.
4. *Calpionellopsis planoblonga* n. sp. B.
5. *Calpionellopsis grandiplanoblonga* n. sp. B.
6. *Calpionellopsis breviovoblonga* n. sp. B.
7. *Calpionellopsis brevoblonga* n. sp. B.
8. *Calpionellopsis parvibrevoblonga* n. sp. B.
9. *Calpionellopsis compoblonga* n. sp. B-v
10. *Calpionellopsis tholoblonga* n. sp. B.
11. *Calpionellopsis robustoplanoblonga* n. sp. B-V.
12. *Calpionellopsis cuspidobrevoblonga* n. sp. B.
13. *Calpionellopsis belloblonga* n. sp. B.
14. *Calpionellopsis venoblonga* n. sp. B.



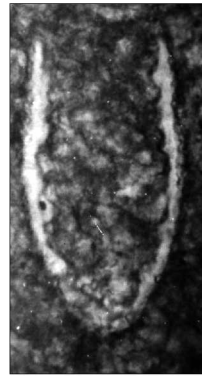
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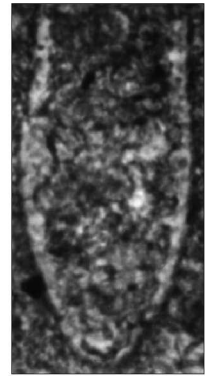
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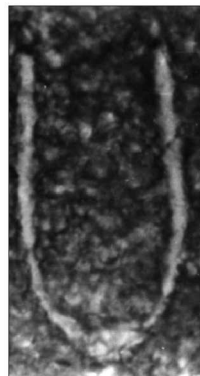
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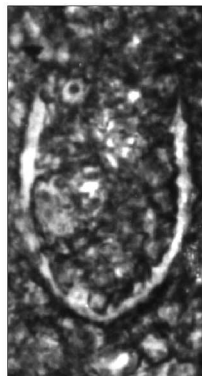
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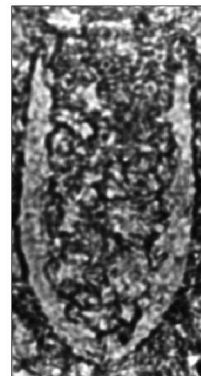
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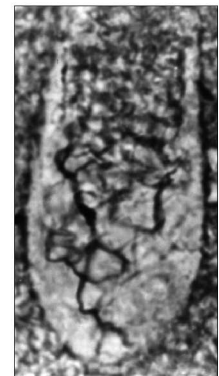
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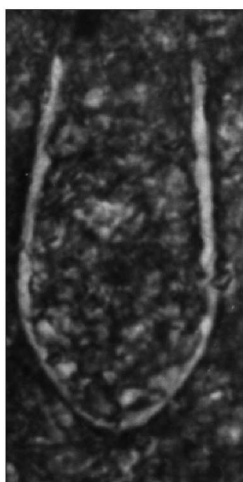
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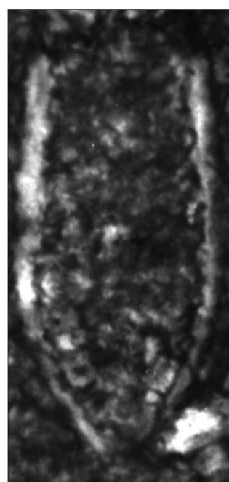
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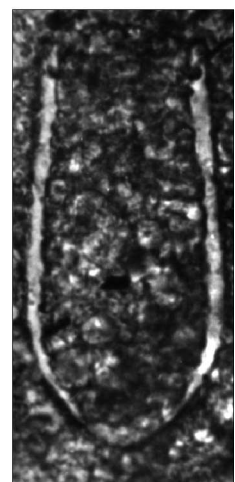
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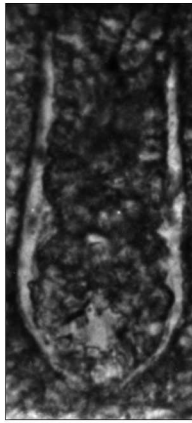


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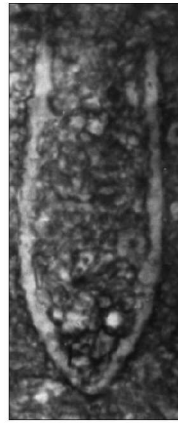
Plate IV

1. *Calpionellopsis graciloblonga* n. sp. B.
2. *Calpionellopsis promoblonga* n. sp. B-V.
3. *Calpionellopsis vincoblonga* n. sp. B.
4. *Calpionellopsis grandinlatoblonga* n. sp. B.
5. *Calpionellopsis conohastoblonga* n. sp. B-V.
6. *Calpionellopsis hastoblonga* n. sp. B.
7. *Calpionellopsis parvihastoblonga* n. sp. B-V.
8. *Calpionellopsis latihastoblonga* n. sp. B-V.
9. *Calpionellopsis tenuhastoblonga* n. sp. B-V.
10. *Calpionellopsis brevihastoblonga* n. sp. B-V.
11. *Calpionellopsis peracutihastoblonga* n. sp. V.
12. *Calpionellopsis tumohastoblonga* n. sp. B.

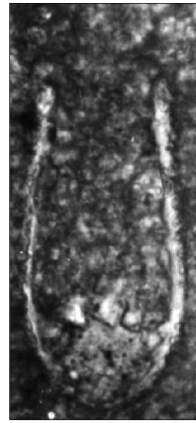
B: Berriasian, V: Valanginian Each photos are holotypes.



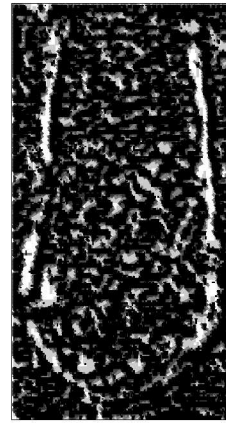
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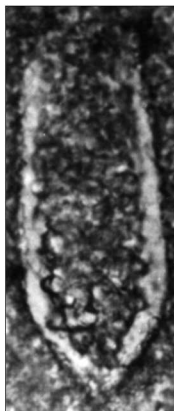
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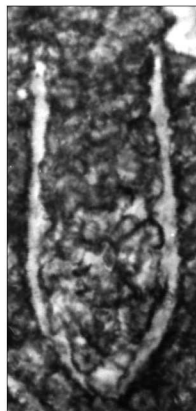
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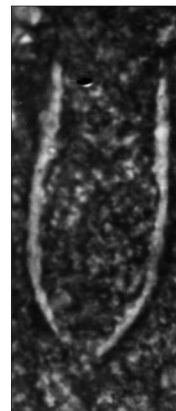
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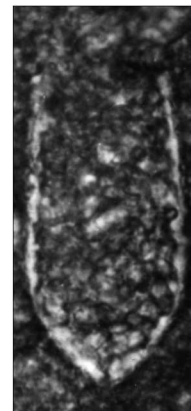
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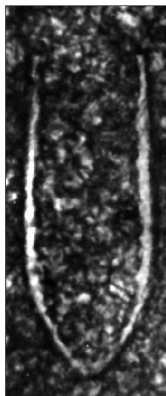
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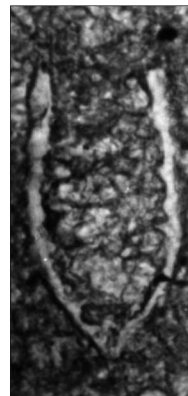
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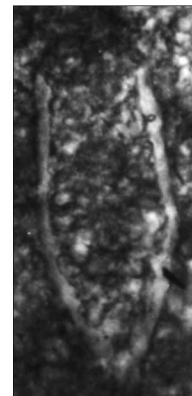
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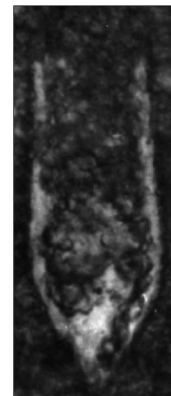
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