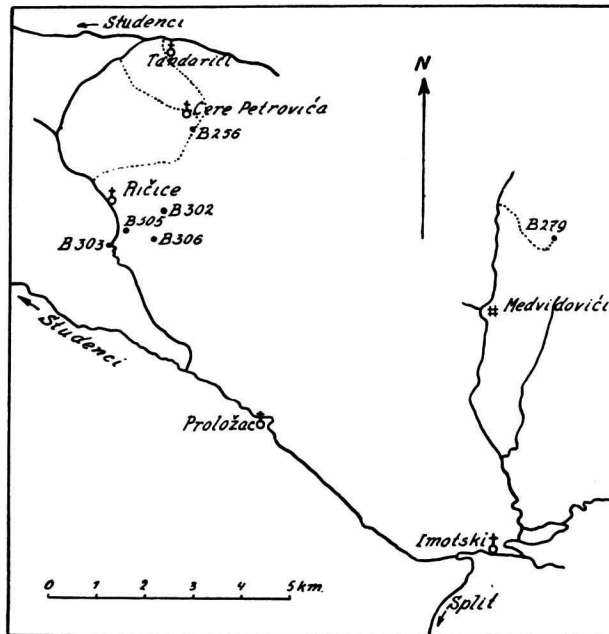


Palæontology. — *Some eocene Foraminifera from the neighbourhood of Ričice near Imotski, E. Dalmatia, Yugoslavia.* By R. C. VAN BELLEN.
(Communicated by Prof. L. RUTTEN.)

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The author collected during the summer of 1939 some samples of flysch marls near Ričice. The map indicates the exact position of the different localities. These marls contain numerous *Foraminifera*, smaller ones as well as larger ones. This paper only deals with the Smaller *Foraminifera*.



Many of the fossils were filled with pyrite, and this often obscured the details, especially of the apertures.

The tabular enumeration gives all the details with regard to the composition of the fauna, and of the stratigraphical range of its components ¹⁾. Some remarks as to the nomenclature of the coiled

¹⁾ There are some errors in the tabular enumeration:

Cristellaria (R) *similis* TERQUEM with liter. 79 should be *Cristellaria* (R) *similis* D'ORB., non TERQUEM, liter. 65.

Lagena striata (D'ORB.) var. *alata* LIEBUS and var. *strumosa* RSS. should be *Lagena sulcata* W. a. J. etc. etc. (according to MATTHES, lit. 61).

Cibicides dorsmanni n.s. should be *Cibicides dorsmani* n.s.

Lagenidae are to be made. The genus *Cristellaria*, abandoned in the handbook by CUSHMAN, has been retained; while, where it was possible, *Lenticulina* and *Robulus* have been indicated as sub-genera by the figures *L* and *R*.

Of the 126 species and varieties 60 are known from the miocene, 60 from the oligocene, 65 from the eocene and 27 from the upper cretaceous. At first sight it seems — with regard to these figures — very difficult to state the age of the fauna. There are, however, various considerations which help us to limit the age with some precision:

1. The fact that not less than 7 species have not been found until now in deposits younger than cretaceous seems to be very suggestive. We must, however, take in mind that these species have been found only once or twice so that they do not have any real value as guide-fossils.

2. The fact that the genus *Marssonella* has been found until now only in cretaceous and eocene deposits and that *Hantkenina* is a strictly eocene genus suggest an eocene age of the fauna.

3. The fact that not less than 16 forms have been found up to now only in eocene deposits and that 10 of these, viz.: *Plectina dalmatina*, *P. eocaenica*, *Quinqueloculina carinata*, *Lagena sulcata* var. *alata*, *Plectofrondicularia trinitatensis*, *Bolivina nobilis*, *Uvigerina cocoaensis*, *U. lappa*, *Pleurostomella* cf. *acuta* and *Pl. incrassata* have been frequently encountered equally suggests an eocene age.

4. The occurrence of typical eocene larger *Foraminifera* (large *Camerinae* and *Discocyclinae*) proves the eocene age of the deposit.

5. On the other hand there are only 4 forms which have been found exclusively in oligocene deposits, and only 2 of these have been found more than once, viz. *Dorothia cylindrica* and *Cibicides dalmatina*.

The following species give rise to some remarks:

Vulvulina sp. *I* (fig. 1, $\times 22$). Periphery acute, greatest part of the test biserial, in my specimens (10) there is at most one uniserial chamber. Outline dentate. Sutures depressed, especially those between the bi- and the uniserial part of the test. Aperture in the biserial portion a low transverse slit, in the adult an oblong slit. Length up to 1 mm., breadth up to 0.6 mm. This species differs from *V. pennatula* and *V. flabelliformis* in having depressed sutures.

Gaudryina eocaenica nov. sp. (fig. 2a, apertural face, $\times 35$; 2b, $\times 20$). Roughly agglutinated form. Length about 1.5 times breadth. Initial end with three chambers in a whorl. Sutures depressed, often hidden by the agglutination of the test. Chambers may be somewhat inflated or projecting, chiefly in the later, biserial part. Aperture an arch at the base of the last chamber. The triangular section at the initial end is invisible because of the roughness of the test. Sometimes the last chamber is somewhat terminal. Length up to 1 mm., breadth up to 0.7 mm.

Plectina sphaerica nov. sp. (fig. 3a, $\times 20$; 3b, $\times 56$; 3c, not oriented

section, $\times 56$). Test almost spherical. Sometimes there is one suture visible. It is impossible to see the beginning or the end of the test, without using acid. The initial end has more than three chambers in the first whorl, probably four. Then follow one or two whorls with three chambers, and finally there are one or two biserial whorls. Aperture in the apertural face. Very roughly agglutinated. Diameter up to 0.5 mm. The spherical form is very typical.

Tritaxilina nov. sp. (fig. 4a, $\times 25$; 4b, apical view, $\times 25$). Initial end "five-serial". Each chamber corresponding with a depression. Sutures curved with the convexity upwards. Each chamber somewhat overhanging. Apertural end broken-off. Length of the fragment: 1.3 mm., breadth 0.6 mm. Only one specimen available.

Marginulina jonesi REUSS (fig. 5, $\times 50$). Agrees fairly well with the description by REUSS. Broader at the base than at the top. About 12 costae running along the whole test, except along the last chamber. Section more compressed than section of *M. mülleri*. Length 0.5 mm., breadth 0.2 mm.

Marginulina mülleri REUSS (fig. 6, $\times 26$). Agrees fairly well with the description by REUSS. About 14 costae running along the whole test, except along the last part. Thickness 0.55 mm., length 0.85 mm.

Marginulina sp. (fig. 7, $\times 30$). Typical of this species is its very high apertural face as seen in the figure. Test ornamented in the coiled part with rows of knobs on the suture-lines. Later sutures only strongly limbate and raised. Length 0.8 mm., breadth 0.5 mm., height of the apertural face 0.5 mm., thickness 0.2 mm.

Cristellaria angustimargo (REUSS) (fig. 9, $\times 40$). The only differences with the original description are the number of the chambers and the diameter. REUSS gives 7—8 chambers, and a diameter of 1.2 mm. Our specimens show only 6 chambers and a diameter of 0.4 mm.

Cristellaria secans REUSS (fig. 10, $\times 54$). Although very badly preserved, it is possible to find the characteristics of this species of REUSS in our form. There are ten chambers in the last whorl. The sutures are strongly limbate and raised. They meet each other in an umbo, filled with clear shell-material. The periphery is sharply keeled. In accordance with the original description the aperture is invisible. Diameter 1 mm., thickness 0.4 mm.

Cristellaria similis D'ORB. (non TERQUEM) (fig. 8a, $\times 25$; 8b, $\times 25$). In the last whorl 6—7 chambers. Sutures curved, somewhat limbate and raised. Periphery with a broad thin carina. Thickness 0.4 mm., diameter 1 mm.

Cristellaria aff. vortex (F. a. M.). Agrees fairly well with *Crist. aff. vortex* (F. a. M.) described by NUTTALL in lit. 62.

Dentalina bohemiensis nov. sp. (fig. 11, $\times 20$). The original description, given by REUSS of *D. annulata* in lit. 69, does agree with the figures on plate 8 (fig. 4) there, but does not agree with the figure on plate 13 (fig. 21). Our specimens agree closely with the last figure, but not so with

the first one. Particularly they do not show the typical raised sutures in the older part of the test. We propose the name of *D. bohemiensis* for the species in pl. 13, fig. 21.

Nodosaria sp. III (fig. 12, $\times 56$). Only part of one specimen has been found. Apical end broken-off. Fragment consists of three chambers. All chambers inflated, last one more strongly so. Sutures depressed. All chambers striated with a number of oblique costae, the number of the costae on each chamber being different. Length of the fragment 0.5 mm.

Bulimina sp. (fig. 13, $\times 100$). Test triangular with rounded edges. Initial end acute, apertural end rounded. Last three chambers making up almost $\frac{2}{3}$ of the length of the whole test. Sutures in the initial end not depressed, limbate, in the apertural end somewhat depressed, caused by the inflation of the last chambers, also limbate. Surface perfectly smooth. Aperture comma-shaped. Length 0.2 mm. This species differs from *B. affinis* D'ORB. in the shape of the test, from *B. ovata* in its triangular section, from *B. intermedia* REUSS in the less strong inflation of the last chambers.

? *Bulimina* sp. (fig. 14a, $\times 30$; 14b, apertural view, $\times 30$). Resembles the genus *Bulimina* in almost every respect. However, there are some differences: after a striated triserial part two chambers follow, non-striated and biserially arranged; finally follows the last chamber, non-striated and terminal, with a rounded aperture in the centre, in a somewhat sunken area. Only one specimen has been found in the sample B 303. We do not think, that it belongs to a new genus, but consider it to be a monstrosity of a *Bulimina*, perhaps of *B. buchiana* (lit. 65).

Uvigerina nov. sp. (fig. 15, $\times 65$). Test about twice as long as broad. Chambers somewhat inflated, sutures obscured by the ornamentation. Wall ornamented in the middle and the upper part of the test with numerous small costae, crossing the sutures; in the lower part of the test there are small spines, irregularly scattered over the surface. Aperture with a very short neck. Length 0.6 mm., breadth 0.3 mm. We did not give this species a name, because only one specimen was available.

Gyroidina nov. sp. (fig. 16a, $\times 42$; 16b, $\times 42$; 16c, $\times 42$). Ventral side convex, dorsal side flattened. Ventral side showing one whorl with 6 chambers. Ventral sutures limbate and raised. Dorsal sutures limbate, oblique, flush with the surface; spiral suture limbate, raised. Only somewhat more than two whorls visible on the dorsal side, rest hidden by a mass of secondary shell-substance. Aperture at the base of the last chamber, near the periphery. Diameter 0.5 mm., height 0.35 mm. We did not give this species a name, because only one specimen was available.

Valvulineria wittpuyti nov. sp. (fig. 17a—c, $\times 30$). Test biconvex, ventrally more than dorsally. Only one whorl visible at the ventral side, with 7—8 chambers. Ventral sutures slightly curved and strongly limbate. The first five sutures on the ventral side are strongly raised near the depressed umbo, becoming flush with the surface towards the periphery.

Periphery at the beginning of the last whorl with a subacute keel; at the end bluntly rounded, without a keel. Dorsal side showing 2—2½ whorls. Dorsal sutures somewhat curved, limbate, partly raised. Aperture just above the periphery on the ventral side. The rests of the broken-off valvular lip are visible in the figure. Diameter up to 0.7 mm. Named in honour of my colleague J. F. C. DE WITTPUYT.

Eponides brückneri (REUSS) (fig. 18a—b, × 17). Corresponds very well with Reuss' description and figures.

Eponides ? karsteni (REUSS). The only difference with the original description (lit. 72) is the presence of a large knob of clear shells substance at the dorsal side. The species, named by FRANKE in lit. 50: *E. karsteni*, is certainly not the same as *E. karsteni* (REUSS).

Asterigerina rotula (KFM.) (fig. 19a—c, × 16). The only difference with the description by UHLIG is that the ramification of the ventral sutures lies nearer to the margin. Sometimes the dorsal whorls are slightly narrower than in UHLIG's figures.

Ceratobulimina perplexa (PLUMMER) (fig. 20a—c × 32½). The only difference with the original description is the limbation of the ventral sutures, which moreover show a very narrow depression in their predial part. Length up to 0,8 m.m.

Rogličia nov. gen. Shape of the test trochoid, like *Ceratobulimina*. All chambers visible from the dorsal side. Only those of the last formed whorl visible on the ventral side. Chambers distinct. Wall thick. Greatest part of the surface covered with short spines; only a region, surrounding the aperture smooth. The aperture, on the ventral side of the last formed chamber, circular, surrounded by a thickened ring, covered with a thin plate. This new genus differs from *Ceratobulimina* by the punctation of the test and the form of the aperture. Named in honour of Dr. J. ROGLIČ of Beograd.

Rogličia sphaerica nov. sp. (fig. 21a, ventral; 21b, peripheral; 21c, dorsal; 21d, not oriented section; 21e, section through aperture; all figures × 35). Test rounded, about spherical. Peripheral margin, especially near the last chamber, somewhat lobate. In the last whorl there are 5—6 chambers, rapidly increasing in size as added. Especially the last chamber forms a great part of the ventral side. Sutures ventrally flush with the surface, last one somewhat depressed. Dorsal side showing two whorls, dorsal sutures limbate, flush with the surface. Aperture at the ventral side of the base of the last chamber. Diameter 0,5—1 mm.

Globigerina ? tricamerata TOLM. (fig. 22a—b, × 38). Caused by the absence of the original literature it is impossible to determine this species with certainty. The figure, given by BRADY and renamed by THALMANN, resembles our species in having only three chambers, that give the lobate appearance to the test.

Globigerinella sp. I (fig. 23, × 60). This very small species shows only one whorl on the ventral side, with 5 chambers in it. The chamber-surfaces are coarsely punctated, with very small spines. Aperture on the ventral

side, with a lip over the umbilicus. Ventral sutures depressed, almost straight. Periphery rounded. Dorsal side showing two whorls. Dorsal sutures depressed, nearly straight. Chambers all inflated. Diameter 0.2 mm., thickness 0.1 mm.

Anomalina tenuissima (REUSS) (fig. 24a—b, $\times 32$). Test almost equally biconvex. Ventrally only one whorl visible with 8 chambers. Ventral sutures strongly curved, sometimes depressed, sometimes flush with the surface. Ventral umbo filled with clear shellmaterial. Periphery with a small keel. Dorsal side showing two whorls; dorsal sutures strongly curved, limbate, flush with the surface or depressed. Greatest diameter 0.5 mm., thickness 0.1 mm.

Anomalina tenuissima (REUSS), var. *evoluta* nov. var. (fig. 25a—b, $\times 40$). This variety differs from *A. tenuissima* (REUSS) in being more evolute and in having a ventral umbonal knob. Periphery lobate, sutures not always limbate and raised (by this characteristic the form differs from *Planulina wuellerstorfi* (SCHW.)). It differs from *Truncatulina costata* in having only 9 chambers in the last whorl, in being evolute ventrally and in having a ventral umbo-filling. Diameter 0.5 mm., thickness 0.12 mm.

Anomalina dalmatina nov. sp. (fig. 26a—c, $\times 35$). Test equally biconvex. Ventral side only one whorl visible. Sunken umbilicus. Depressed sutures, curved near the periphery. Fourteen chambers in the last whorl. Periphery subacute without a definite keel. Dorsal side showing the chambers only in one whorl, but the limbate and raised spiral-suture can be followed for almost 2 whorls. Dorsal sutures, except the spiral suture, depressed. Aperture invisible. Its habit placed this species under the genus *Anomalina*. There is no *Anomalina* s.l. neither a *Rotalia* s.l., that shows this particular dorsal development. Diameter up to 0.8 mm., thickness up to 0.4 mm.

Anomalina sp. (fig. 27a—b, $\times 48$). Ventral side convex, dorsal side almost flat. Ventral side showing only one whorl, with 8—9 chambers, last ones somewhat inflated. Ventral sutures flush with the surface, except the last ones, which are slightly depressed (caused by the inflation of the last chambers), all sutures limbate. Dorsal side showing $1\frac{1}{2}$ whorls. Sutures limbate, flush with the surface, except the last ones, which are depressed. This species differs from *Anomalina similis* HANTKEN (lit. 54), in being more involute dorsally and in being thicker. Diameter 0.6 mm., thickness 0.3 mm.

Cibicides cryptomphala (REUSS) (fig. 28a—b, $\times 27\frac{1}{2}$). Test biconvex, ventrally more than dorsally. Ventral side showing one whorl with 7—8 chambers. Ventral sutures depressed, the last ones more strongly than the first. Ventral umbo filled with a knob of clear shellmaterial. Last two or three chambers inflated. Periphery acute, not keeled. Dorsal side showing somewhat more than one whorl. Dorsal sutures depressed, the first ones somewhat limbate, curved. Spiralsuture limbate. Dorsal side with a knob

of clear shellmaterial. Last part of the periphery lobulated. Diameter 0,8 mm, thickness 0,35 mm.

Cibicides granosus (HANTKEN) (fig. 29a—b, $\times 35$). Corresponds very well with HANTKEN's description and figures. The species has been figured here again because only one set of figures is available in the literature.

Cibicides dalmatina nov. nom. (fig. 30, $\times 30$). Our specimen can be determined as *Truncatulina dutemplei* d'ORB. as described by REUSS in lit. 77. This description and the original one by d'ORBIGNY in lit. 65 as well as the figures do not agree inter se. The following differences are to be noticed:

REUSS:	d'ORBIGNY:
12 chambers in the last whorl.	8 chambers in the last whorl.
dorsal side showing only one whorl, rest hidden by secondary shellmaterial.	dorsal side showing two whorls, rest hidden by secondary shellmaterial.
curvature of the ventral and dorsal sutures very strong.	curvature of the sutures not so strong.

Because d'ORBIGNY used the name "*dutemplei*" first, it is necessary to give a new name to the *Truncatulina dutemplei* of REUSS. The following description can be given: Test planoconvex. Ventral side strongly convex, showing only the last whorl. Ventral sutures depressed, curved. Periphery sharp, not keeled. Dorsal side flat, showing somewhat more than one whorl, rest hidden by a somewhat raised boss of clear shellmaterial. Twelve chambers in the last whorl. Aperture over the periphery. Diameter 0,6 mm., thickness 0,35 mm. According to the position of the aperture this species belongs to the genus *Cibicides*.

Cibicides keijzeri nov. sp. (fig. 31a—b, $\times 20$; 31c, $\times 35$). Test variable, sometimes almost equally biconvex, sometimes planoconvex (dorsal side flat, ventral side convex). Ventral side with an umbo, filled with clear shellmaterial. Only one whorl visible on the ventral side. Sutures ventrally limbate, curved, mostly flush with the surface. The ventral umbo surpasses the convex outline of the ventral side. Periphery somewhat rounded, with a subacute keel of clear shell-material. Dorsal side with three visible whorls. In the last one 10—11 chambers. Dorsal sutures limbate, curved, mostly flushed with the surface. Spiral suture limbate and raised. First two whorls somewhat hidden by secondary shell-substance. Ventrally finely porous, dorsally more coarsely so. Diameter 1 mm., thickness 0,5 mm. Named in honour of my colleague F. KEIJZER.

Cibicides trinitatensis NUTTALL (fig. 32, $\times 30$). Our species agree very well with the american ones.

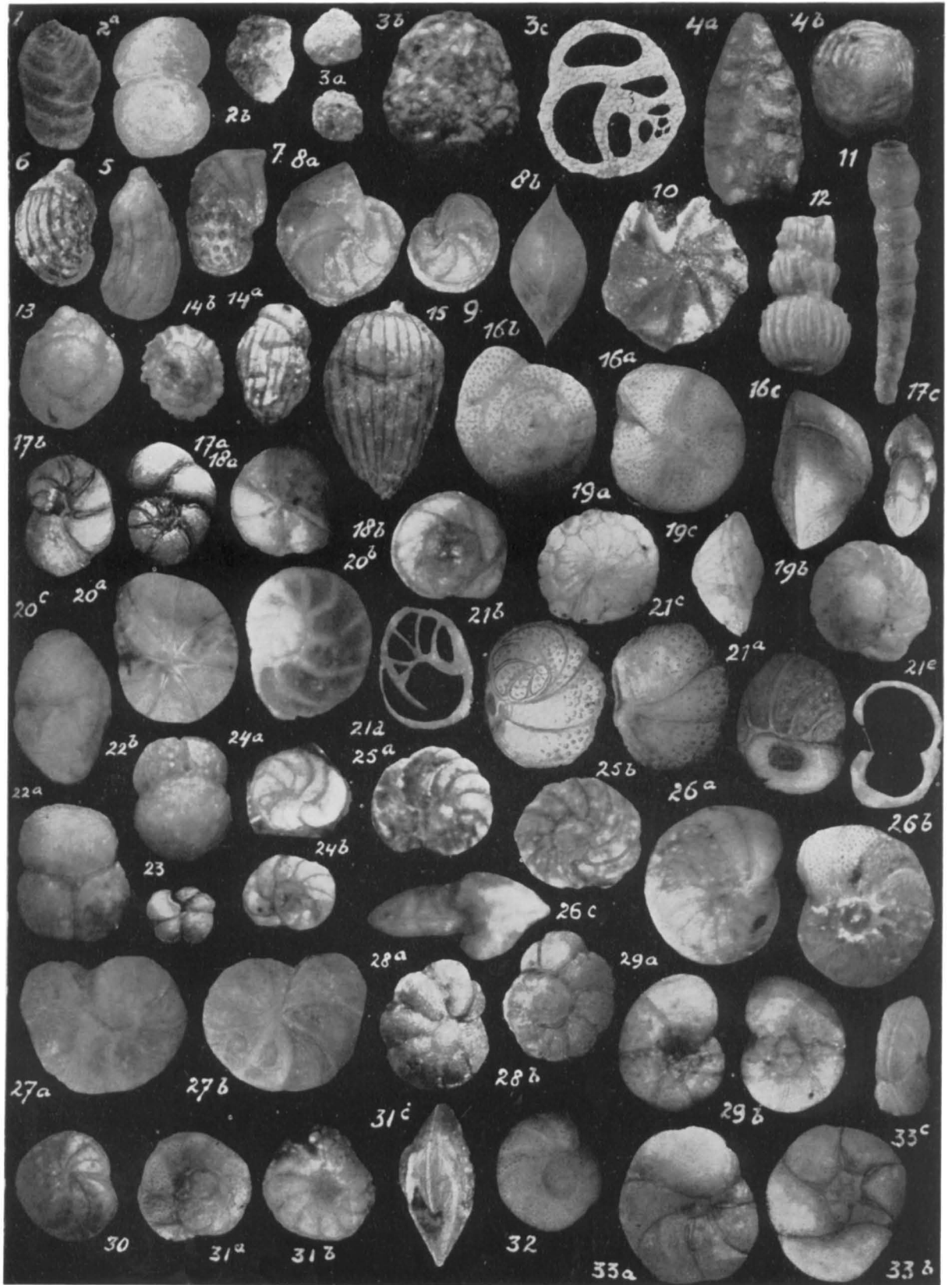
Cibicides dorsmani nov. sp. (fig. 33a—c, $\times 40$). Ventral side convex, dorsal side more strongly so. Ventral side showing only the last whorl, with 7 chambers. Ventral sutures depressed, sometimes with a limbate ridge

in the depression. Last chamber inflated. Umbonal area depressed. Periphery subacute. Dorsal side showing two whorls. The last whorl covers a part of the preceeding one. Aperture invisible. The general appearance of the test places it under the genus *Cibicides*. Diameter up to 0,6 mm., thickness up to 0,3 mm. This species is named in honour of my colleague L. DORSMAN.

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R. C. VAN BELLEN: SOME EOCENE FORAMINIFERA FROM THE NEIGHBOURHOOD OF RIČICE NEAR IMOTSKI, E. DALMATIA, YUGOSLAVIA.

EOcene Foraminifera from the neighbourhood of Ričice near Imotski (E.Dalmatia).	Text a/o fig.	N.Dalm. Lieb. 1911	Alb. Lieb. 1928	M.Dal. Keyz. 1938	B256	B279	B302	B303	B305	B306	Upper Cret.	L.Eo-cene.	M.Eo-cene.	U.Eo-cene.	Oligo-cene.	Mioc. and Rec.	Literature:
<i>Textularia corrugata</i> Costa.....	x	-	-	-	-	-	-	x	-	-							6,77,80.
<i>Vulvulina</i> sp.I.....	x	-	-	-	-	-	-	x	-	-							29
sp.II.....	x	-	-	-	-	-	-	x	-	-							50,59,69,74.
<i>Tritaxia tricarinata</i> (Rss.).....	x	-	-	-	-	-	-	x	-	-							33.
<i>Gaudryina eoecena</i> nov.sp.....	x	-	-	-	-	-	-	x	-	-							33,54,59.
<i>Clavulinoides haeringensis</i> Cushman.....	x	-	-	-	-	-	-	x	-	-							34,42,57,82.
szaboi (Htk.).....	x	-	-	-	-	-	-	x	-	-							34,63.
<i>Marssonella indentata</i> (Cushman & Jarvis).....	x	-	-	x	-	-	-	x	-	-							34.
<i>Dorothia cylindrica</i> (Nuttall).....	x	-	-	-	-	-	-	x	-	-							34,57,59.
eoecena Cushman.....	x	-	-	-	-	-	-	x	-	-							34,57.
sp.I.....	x	-	-	-	-	-	-	x	-	-							
sp.II.....	x	-	-	-	-	-	-	x	-	-							
sp.III.....	x	-	-	-	-	-	-	x	-	-							
<i>Flectina dalmatina</i> (Schub.).....	x	-	-	-	-	-	-	x	-	-							
eoecena Cushman.....	x	-	-	-	-	-	-	x	-	-							
sphaerica nov.sp.....	x	-	-	-	-	-	-	x	-	-							
<i>Tritaxilina</i> nov.sp.....	x	-	-	-	-	-	-	x	-	-							
<i>Quinqueloculina</i> carinata d'Orb.....	x	-	-	-	-	-	-	x	-	-							
pygmaea Rss.....	x	-	-	-	-	-	-	x	-	-							49,79.
vulgaria d'Orb.....	x	-	-	-	-	-	-	x	-	-							6,70,80.
sp.(?form.juv.Q.plana d'Orb.).....	x	-	-	-	-	-	-	x	-	-							11,23.
<i>Cristellaria</i> (R) angustimargo (Rss.).....	x	-	-	-	-	-	-	x	-	-							49,79.
(R) arcuatostrata (Htk.).....	x	-	-	-	-	-	-	x	-	-							5,71.
(L) cultrata (Mtf.).....	x	-	-	-	-	-	-	x	-	-							54,66.
(R) gutticostata (Gumb.).....	x	-	-	-	-	-	-	x	-	-							65.
(R) inornata (d'Orb.).....	x	-	-	-	-	-	-	x	-	-							20,30,52,54,63,66.
(R) megalopolitana (Rss.).....	x	-	-	-	-	-	-	x	-	-							5,54,60,63,65,66,67.
(L) rotulata (Lam.).....	x	-	-	-	-	-	-	x	-	-							72.
(L) secans Rss.....	x	-	-	-	-	-	-	x	-	-							6,15.
(R) similis Terquem.....	x	-	-	-	-	-	-	x	-	-							74.
(R) vortex (F.a.M.).....	x	-	-	-	-	-	-	x	-	-							79.
(R) aff.vortex (F.a.M.).....	x	-	-	-	-	-	-	x	-	-							6,57.
<i>Marginulina</i> jonesi Rss.....	x	-	-	-	-	-	-	x	-	-							62.
mulleri Rss.....	x	-	-	-	-	-	-	x	-	-							44,75.
subaculeata (Cushman).....	x	-	-	-	-	-	-	x	-	-							75.
var.glabrata (Cushman).....	x	-	-	-	-	-	-	x	-	-							6,16,80.
sp.I.....	x	-	-	-	-	-	-	x	-	-							16,25,62.
<i>Dentalina</i> bohemensis nov.sp.....	x	-	-	-	-	-	-	x	-	-							
consobrina d'Orb.....	x	-	-	-	-	-	-	x	-	-							69.
cf.megapolitana Rss.....	x	-	-	-	-	-	-	x	-	-							6,54,65,71,80.
<i>Nodosaria</i> ewaldi Rss.....	x	-	-	-	-	-	-	x	-	-							
hirsuta d'Orb.....	x	-	-	-	-	-	-	x	-	-							72.
radicula (Linn.).....	x	-	-	-	-	-	-	x	-	-							57,71.
raphanus (Linn.).....	x	-	-	-	-	-	-	x	-	-							6,65,71,80.
sp.I.....	x	-	-	-	-	-	-	x	-	-							6,57.
sp.II.....	x	-	-	-	-	-	-	x	-	-							
sp.III.....	x	-	-	-	-	-	-	x	-	-							
<i>Saracenaria acutaureicularis</i> (F.a.M.).....	x	-	-	-	-	-	-	x	-	-							
?Fronicularia sp.....	x	-	-	-	-	-	-	x	-	-							
<i>Lagena marginata</i> (W.a.B.).....	x	-	-	-	-	-	-	x	-	-							
?orbignyana (Seg.).....	x	-	-	-	-	-	-	x	-	-							
striata(d'Orb.) var.alata Liebu.....	x	-	-	-	-	-	-	x	-	-							
var.strumosa Rss.....	x	-	-	-	-	-	-	x	-	-							6,9,13,16,36,80.
sulcata (W.a.J.) var.apiculata Cushman.....	x	-	-	-	-	-	-	x	-	-							
<i>Plectofronicularia trinitatensis</i> C.a.J.....	x	-	-	-	-	-	-	x	-	-							
<i>Bulimina affinis</i> d'Orb.....	x	-	-	-	-	-	-	x	-	-							
costata d'Orb.....	x	-	-	-	-	-	-	x	-	-							
inflata Seg.....	x	-	-	-	-	-	-	x	-	-							
sp.....	x	-	-	-	-	-	-	x	-	-							
? <i>Bulimina</i> sp.....	x	-	-	-	-	-	-	x	-	-							
<i>Bolivina antiqua</i> d'Orb.....	x	-	-	-	-	-	-	x	-	-							
nobilis Htk.....	x	-	-	-	-	-	-	x	-	-							
<i>Uvigerina coccaensis</i> Cushman.....	x	-	-	-	-	-	-	x	-	-							
lappa Cushman & Edw.....	x	-	-	-	-	-	-	x	-	-							
cf.urnula Orb.var.semiorinata d'Orb.....	x	-	-	-	-	-	-	x	-	-							
nov.sp.....	x	-	-	-	-	-	-	x	-	-							
<i>Pleurostomella</i> cf.acuta Htk.....	x	-	-	-	-	-	-	x	-	-							
alternans Schw.....	x	-	-	-	-	-	-	x	-	-							
incrassata Htk.....	x	-	-	-	-	-	-	x	-	-							
<i>Ellipsolagena apiculata</i> (Rss.).....	x	-	-	-	-	-	-	x	-	-							
<i>Discorbis araucana</i> (d'Orb.).....	x	-	-	-	-	-	-	x	-	-							
eximia (Htk.).....	x	-	-	-	-	-	-	x	-	-							
<i>Valvulineria araucana</i> (d'Orb.).....	x	-	-	-	-	-	-	x	-	-							
wt-puyti nov.sp.....	x	-	-	-	-	-	-	x	-	-							
<i>Gyroldina orbicularis</i> d'Orb.....	x	-	-	-	-	-	-	x	-	-							
soldanii d'Orb.....	x	-	-	-	-	-	-	x	-	-							
ngv.sp.....	x	-	-	-	-	-	-	x	-	-							
<i>Eponides brückneri</i> (Rss.).....	x	-	-	-	-	-	-	x	-	-							
concentricus (P.a.J.).....	x	-	-	-	-	-	-	x	-	-							
?karsteni (Rss.).....	x	-	-	-	-	-	-	x	-	-							
nanus Rss.....	x	-	-	-	-	-	-	x	-	-							
praecinctus (Karrer).....	x	-	-	-	-	-	-	x	-	-							
repandus (F.a.M.).....	x	-	-	-	-	-	-	x	-	-							
tschoppi van Bellen.....	x	-	-	-	-	-	-	x	-	-							
umbonatus (Rss.).....	x	-	-	-	-	-	-	x	-	-							
<i>Epistomina elegans</i> (d'Orb.).....	x	-	-	-	-	-	-	x	-	-							
<i>Asterigerina rotula</i> (Kfm.).....	x	-	-	-	-	-	-	x	-	-							
<i>Ceratobulimina perplexa</i> (Plummer).....	x	-	-	-	-	-	-	x	-	-							
<i>Roglicia sphaerica</i> nov.gen.nov.sp.....	x	-	-	-	-	-	-	x	-	-							
<i>Pulvinulina pacifica</i> Cushman.....	x	-	-	-	-	-	-	x	-	-							
<i>Cassidulina havanensis</i> Cushman & Boya.....	x	-	-	-	-	-	-	x	-	-							
sp.I.....	x	-	-	-	-	-	-	x	-	-							
<i>Sphaeroidina bulloides</i> d'Orb.....	x	-	-	-	-	-	-	x	-	-							
<i>Globigerina bilobata</i> d'Orb.....	x	-	-	-	-	-	-	x	-	-							
bulloides d'Orb.....	x	-	-	-	-	-	-	x	-	-							
conglomerata Schw.....	x	-	-	-	-	-	-	x	-	-							
cretacea d'Orb.....	x	-	-	-	-	-	-	x	-	-							
inflata d'Orb.....	x	-	-	-	-	-	-	x	-	-							
?tricamerata Tolm.....	x	-	-	-	-	-	-	x	-	-							
triloba Rss.....	x	-	-	-	-	-	-	x	-	-	</						

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