

FORAMINIFERA FROM THE CRETACEOUS OF
SOUTHERN LIMBURG, NETHERLANDS. XV.

by J. HOFKER

Dictyopsella tenuissima (Reuss).
Pl. 1.*Truncatulina tenuissima* Reuss, 1862, p. 317, pl. 3, fig. 2.*Planulina tenuissima* (Reuss) Visser, 1950, p. 288, pl. 6, fig. 3.

Test trochoidally coiled, all chambers indistinctly visible on the dorsal side, only those of the last formed coil on the ventral side, leaving at that side a small umbilicus free. Number of chambers of the last formed whorl 7—9, periphery slightly lobulated. Test very much compressed with more or less acute margin. Sutures on the dorsal side more or less oblique, those on the ventral side radiate. Wall composed of fine grains of silica strongly cemented together so that the surface is distinctly granular but relatively smooth. Aperture on the ventral side or in older specimens becoming areal and multiple (may be labyrinthic outgrowths, in the eroded wall).

In a clarifier and on sections the inner structure is strongly labyrinthic with numerous stolons in the chamber-walls perpendicular to the periphery. First chambers simple. Walls very thick, especially towards the margin.

Diameter of tests 0,54—0,65 mm, thickness 0,12—0,20 mm.

This species seems to be the same as described by Reuss as *Truncatulina tenuissima*. It was mentioned by Franke in 1925 and 1928, and moreover by Visser as *Planulina tenuissima*. In her description she says: "Wall coarse owing to the coarse perforation, looking like agglutinant". But there are no pores at all, the wall really is agglutinant.

The genotype of *Dictyopsella*, *D. kiliani*, was described by Schlumberger (Bull. Soc. géol. France, Sér. 3, 27, 1899, p. 462, pl. 8, figs. 5, 7; pl. 11, fig. 20). It was found in a layer of chalk, supposed to be Santonian, Trago, Spain; but the geological age of this layer is far from certain. I could study specimens from Trago; they do not differ from our *Dictyopsella*

at all; specimens from Upper Maestrichtian of Navarro, Spain, once again do not show any difference with our species. So it seems, that *Dictyopsella kiliani* Schlumberger and *Truncatulina tenuissima* are very closely allied or even identical. In the latter case *D. kiliani* has to be renamed and is a synonym of *D. tenuissima*. In any case *Truncatulina tenuissima* Reuss from the M-complex of Maestricht is a real *Dictyopsella*, and, in Spain, is found together with *Lepidorbitoides media* and typical *Siderolites calcitrapoides*, together with many other species occurring in the M-layers of Maestricht.

The species occurs in the Middle and Upper Mc, and, more rarely, in the whole Md. It was very common in faunae gathered in holes at the border Mc—Md, and in the Kunrade chalk it is found also in some samples which seem to be of the age of lowest Md, always poorly preserved, obviously reworked from the real M-layers.

FORAMINIFERA FROM THE CRETACEOUS OF
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On a species of *Bolivinoidea* in the upper layers of the Md of Southern Limburg,

Bolivinoidea polonica Pozaryska
Pl. 2.

In the upper layers of the Md (the so-called Md 4) of the quarry van der Zwaan, M. Meyer found several specimens of a small *Bolivinoidea*, not belonging, however, to the *delicatula*-group, but with all the characters of the *decorata*-group. The author was able to study this material, and himself found some specimens in the upper layers of the Md in the quarry of Curfs, near Houthem, and in upper-Md-layers in the tranchée du Canal Albert near Vroenhoven, Belgium. Though the species never is common, it must be typical for the uppermost Md. In all cases the species is accompanied by the typical planctonic species *Gumbelina ultimatumida*, *Globigerina triloculinoides*, *Globigerina pseudobulloides*, etc.

The tests are small, length about 0,33 mm, breadth 0,29 mm, losangeshaped, with the lar-

gest breadth slightly above the middle. The alar prolongations of the sutures in the last-formed chambers are distinct, 5—6 of them at a suture, whereas the other ornamentation consists of some irregular knobs. The margin is rounded.

The specimens seem to belong to *Bolivinoidea polonica* Pozaryska (Acta Geologica Polonica, Vol. 4, Wardzawa, 1954, p. 252, fig. 1). This species was described from Gora Pulawska. in a drilling, 24 m, in Danian marls.

When we consider that the highest developed *Bolivinoidea* in the Cretaceous of Holland and Belgium, *Bolivinoidea gigantea*, in its utmost ornamentation is found in the Lower Cr 4 and reworked in the overlying Ma, and that in the thick layers (thickness up to 50 m) of the whole M-complex no *Bolivinoidea* occur, this discovery is of much importance. Pozaryska mentioned, that the Danian deposits yield a rich foraminiferal fauna, some of them bearing type characters of the Tertiary fauna, since such genera as *Uvigerina*, *Alabamina* and *Coleites* are to be found there (p. 63 of the reprint, summary in English). Quite the same can be said of the Upper Md fauna; here also the Tertiary character of the Foraminifera is striking. In this respect the finding of this species of *Bolivinoidea*, the last known form of the cretaceous group of *Bolivinoidea decorata*, together with many other species with Tertiary character, as in Poland, seems to be of importance.

FORAMINIFERA FROM THE CRETACEOUS OF SOUTHERN LIMBURG, NETHERLANDS. XVII.

by J. HOFKER

LAGENA ACUTICOSTA Reuss. Pl. 3.

Lagena acuticosta Reuss, Sitz. ber. Math. Nat. Cl. k. Akad. Wiss. Vienna, Vol. 44, 1861 (1862), p. 305, pl. 1, fig. 4.

Lagena acuticosta Reuss, Visser 1950 Thesis Leiden, p. 234, pl. 2, fig. 1.

Test globular or slightly elongate, covered by 12 rounded, often somewhat irregular costae, running from the base of the test towards the protruding aperture, but not reaching it, and ending at the base into a very short spine. Base

rounded to flattened; wall in most cases shining, with very fine pores between the costae. Wall thick. Aperture provided with inconspicuous and fine radial openings, closed at its end. Never a real neck is formed.

Length 0.75 mm, or somewhat smaller (thickness 0.55 mm).

Brotzen (1936, Sver. geol. Unders., Ser. C, 396, p. 112) believes that his *Lagena isabella* d'Orbigny from the Santonian of Sweden and *L. acuticosta* Reuss may be the same species. But not only his specimens lack the closed aperture, but also they are much smaller with much finer costae. Visser described one single specimen, which is very small, from the Mc of South Limburg, where it is always very rare.

The species is not found in any sample from the Ma, the lower Mb; it occurs in several samples, always rarely, from the basal conglomerate with Kunrade habitus of the lowest Mc upward, and becomes more abundant to common in samples from the lower Md; in the upper Md it is equally missing or extremely rare.

L. acuticosta has been found also in many samples from the Kunrade chalk, especially those which seem to be of the lower Md time.

Striking is, that the specimens seem to lack the typical antapical closed part at the centre of the base, always found in *Lagenae*. So it may belong to quite a different group.

FORAMINIFERA FROM THE CRETACEOUS OF SOUTHERN LIMBURG, NETHERLANDS. XVIII.

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EPONIDES TOULMINI (Brotzen). Pl. 4.

Eponides boueana Toulmin, 1941, p. 601, pl. 81, figs. 6, 7.

Eponides toulmini Brotzen, 1948, p. 78, pl. 10, fig. 16.

Pseudoparrella meeterenae Visser, 1950, p. 278, pl. 7, fig. 9.

Eponides gratus (Reuss), Van Bellen, 1946, p. 57, pl. 7, figs. 4—9.

Test slightly oval, lenticular, ventral side sometimes more convex than dorsal side. Chambers at ventral side somewhat inflated and thus forming a small umbilical depression.