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Recent Literature on the Foraminifera

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Soldado formation, with its characteristic foraminiferal fauna which is essentially absent in the Lizard Springs formation.

Grinsdale (loc. cit.) criticized Cushman for placing the Velasco shale and Lizard Springs formation in the Upper Cretaceous without, however, presenting evidence for their Paleocene age. Cushman (Jour. Pal. Vol. 21, No. 6 (1947), p. 587) in his reply to this criticism gives good faunistic reasons for considering the Velasco and Lizard Springs as late Cretaceous and not as Paleocene. Reference is also made to the discussion by Cushman and Renz (loc. cit. p. 4, 5, 11) on the age of the Lizard Springs formation which stresses the predominantly Cretaceous aspect of the foraminiferal fauna. Further paleontological evidence for a late Cretaceous age of the Lizard Springs formation is indirectly supplied, as mentioned elsewhere by the occurrence of the Upper Cretaceous genus *Orbignya*- *ana* Hagenow within the range of the Lizard Springs faunas in the upper part of the Vidoño formation of Eastern Venezuela.

Although the faunistic boundary between the Cretaceous and Tertiary has not as yet satisfactorily been settled in the Western Hemisphere, some light is thrown on this question in the interesting publication by F. Broten entitled “The Swedish Paleocene and its foraminiferal fauna” (Sver. Geol. Unders. Ser. C. No. 493 (1948), pp. 32-33). Broten reaches the conclusion based on faunistic grounds, that the lower Midway of the Gulf States most probably correlates with the upper Danian of Europe and the upper Midway with the European lower Paleocene. During a visit to Caracas in 1948, Broten was shown the foraminiferal assemblages of the Trinidad Lizard Springs formation and he expressed the opinion that they are of predominantly Danian age.

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24. **GLOBIGERINITA NAPARIMAENSIS** N. GEN., N. SP., FROM THE MIOCENE OF TRINIDAD, B. W. I.

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In a recent paper on *Globigerinita insueta* Cushman and Stainforth from the Oligocene of Trinidad, B.W.I. (Bronnimann, 1950) reference was made (p. 82, pl. 14, fig. 11) to a small trochoidal *Globigerina* which in the adult stage is three chambered with a single, irregularly shaped supplementary chamber covering the umbilical portion of the test. This form had been included in the genus *Globigerinita* as *G. aff. insueta*, but reservation was made as to its true *Globigerinita*-character (p. 82). The ontogeny of this "*Globigerina*" has since been investigated in some detail, although the structure and the mode of communi-

**EXPLANATION OF TEXT FIGURES 1-14**

Figs.


1. Holotype.—Sample T. L. L. Cat. No. 161214. 1, umbilical view; 2, dorsal view. *Globorotalia menardii* zone, Lengua Beds. The supplementary chamber is transparent and shows the last-formed *Globigerina* chamber with single large aperture. Two small semicircular openings are visible at the suture of the supplementary chamber.


7, 10, 11. Sample T. L. L. Cat. No. 161212. *Globorotalia menardii* zone, Lengua Beds. The supplementary chamber of small trochoid specimens have been opened and show the large, semicircular aperture of the last-formed *Globigerina* chamber.

9. Sample T. L. L. Cat. No. 161212. *Globorotalia menardii* zone, Lengua Beds. The last-formed *Globigerina* chamber has been opened and shows the large semicircular apertures of the *Globigerina* chambers.


cation of the innermost chambers are still unknown. However, the features of the adult chambers formed prior to the development of the supplementary chamber-like growth, clearly indicate a new genus only superficially resembling Globigerinatella.

The following definition of the new genus Globigerinita and the description of the new species G. naparimaensis are based on material from the lower Miocene of Trinidad.

Genus Globigerinita Bronnimann, n. gen.

Genotype.—Globigerinita naparimaensis Bronnimann, n. sp., Lenga Beds, Cruse formation, lower Miocene, Naparima area, Trinidad, B.W.I.

Diagnosis.—Test distinctly trochoidal; chambers subglobular, increasing gradually in size, non-enveloping in the adult. Umbilical portion covered with single, irregularly shaped, frequently inflated, supplementary chamber. Aperture multiple in the adult, consisting of small semicircular openings along the sutures of supplementary chamber. These openings are arched with minute lips. Apertures of chambers formed prior to the supplementary chamber are single, large, broad, semicircular openings with minute lips. Wall variable in thickness, finely perforate.

Remarks.—The monotypic genus Globigerinita is characterized by the distinctly trochoidal test, the single irregularly shaped supplementary chamber, the large semicircular apertures connecting the Globigerina chambers and the multiple aperture along the suture of the supplementary chamber. Its essential difference from the morphologically similar genus Globigerinatella are the non-enveloping adult Globigerina chambers and the single apertures connecting the late Globigerina chambers. The ancestor of Globigerinita apparently is a small trochoidal Globigerina with single, large aperture similar to that of the early ontogenetic stage of Globigerinatella (Globigerina stage with single aperture).

Occurrence.—Lower Miocene, possibly also upper Oligocene of Trinidad, B.W.I.

Globigerinita naparimaensis Bronnimann, n. sp.

Text figures 1-14.

Test rather small, distinctly trochoidal, spire with two to three whorls. Chambers subglobular, gradually increasing in size, non-enveloping. Adult with three to four usually fairly large and well separated subglobular chambers. Initial chamber very small and normally not visible. Umbilical region of adult covered with a single, irregularly shaped and frequently inflated supplementary chamber, branching out into the sutural grooves. Multiple aperture of the adult consists of small semicircular openings, with minute lips, along the sutures of the supplementary chamber. Openings frequently at the end of short, lateral processes as in some types of Globigerinatella insueta (1950, pl. 14, fig. 9). Globigerina chambers formed prior to the supplementary growth possess single, large, broad semicircular apertures, with minute lips. No multiple apertures are developed as in the final Globigerina stage of Globigerinatella insueta. Walls are finely perforate and vary somewhat in thickness. Wall of supplementary chamber may be very thin, glass-like and transparent, but in general it is of much the same texture as that of the adult Globigerina chambers.

Dimensions.—The largest diameters measured across the umbilical side range from 157μ to 330μ.


Occurrence.—Globigerinita naparimaensis occurs in the Globorotalia menardii zone and Globorotalia mayeri zone, Lenga Beds, Cruse formation, lower Miocene, Naparima area, South Trinidad, B.W.I.

REFERENCES


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