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Grimsdaleinella, a new Genus of the Foraminiferal Family Heterohelicidae[1])

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With 1 plate (I)

INTRODUCTION

During a study in 1936 of the Upper Eocene Plaisance Conglomerate of the Central Range of Trinidad, B. W. I., Dr. H. G. Kugler collected a number of dark grey, calcareous shale boulders which originated from the Senonian lower part of the Napraima Hill formation. One of these boulders was found to contain an abundance of Heterohelicidae. Amongst known forms there were numerous specimens present whose biserially arranged chambers became strongly elongate, tapering to long, thin spines. Because of these distinct spines, these forms can not be included in any of the existing genera of the family Heterohelicidae. They are, therefore, described here as *Grimsdaleinella*, n. gen.

SYSTEMATIC DESCRIPTION

Family Heterohelicidae CUSHMAN 1927

Subfamily Heterohelicinae CUSHMAN 1927

Genus *Grimsdaleinella*, n. gen.

Type species. – *Grimsdaleinella spinosa*, n. sp.

Test free; chambers inflated, biserially arranged throughout or planispiral in early stage and biserial in adult stage, tapering into distinct spines. Sutures depressed; wall calcareous, finely perforate; surface smooth or hispid or striate; aperture interiomarginal, an arch or an asymmetrical comma-shaped slit extending up the apertural face, usually placed more towards one side of the test.

Observed stratigraphic range. – Turonian and/or Coniacian.

Remarks. – *Grimsdaleinella*, n. gen. differs from *Chiloguembelina* LOEBLICH & TAPPAN in possessing chambers with distinct, tapering spines. *Grimsdaleinella* does not have the apertural necklike extension which is typical for *Chiloguembelina*. It differs from *Heterohelix* EHRENBERG in having its chambers tapering into distinct spines.

The genus is named for TOM F. GRIMSDALE in recognition of his contributions on the value and use of planktonic Foraminifera as stratigraphic index fossils.

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Grimsdaleinella spinosa, n. sp.

Pl. I, figs. 1–11

Shape of test and chambers. – Biserial throughout, initial 1–2 chambers spherical, later ones becoming elongate with long, tapering spines that extend towards and beyond the initial chambers. The angle between the spines and the longitudinal axis of the test may vary from nil to over 45°. The number of chambers in an adult specimen is about 10. Wall. – Calcareous, finely perforate, smooth. Sutures. – Distinct, depressed. Aperture. – An asymmetrical, comma-shaped slit, interiomarginal, extending into the apertural face, placed more towards one side of the test. Length of holotype. – 0.51 mm.

Observed stratigraphic range. – *Globotruncana inornata* and/or *Globotruncana renzi* zone (Turonian-Coniacian), Naparima Hill formation.

Locality. – Holotype (pl. I, figs. 1a–1c) and figured paratypes (pl. I, figs. 2–11) from sample H. G. K. 3725, a boulder of dark, calcareous shale with calcite veins; originating from the Naparima Hill formation, reworked in the Upper Eocene Plaisance Conglomerate, outcropping in the Stollmeyer Quarry, south side of Hermitage Road, about 7000 feet northeast of the Pointe-à-Pierre Railway Station, Trinidad, B. W. I.; Coordinates N: 268 500 links, E: 374 000 links. Figured specimens deposited in the Museum of Natural History, Basle (holotype C 2519, paratypes C 2520–C 2529). Unfigured paratypes deposited in the U.S. National Museum, Washington (USNM 626 332–39).

Remarks. – *Grimsdaleinella spinosa*, n. gen., n. sp., has so far been found only in a single boulder originating from the Naparima Hill formation. The accompanying foraminiferal fauna consists of abundant *Heterohelix globulosa* (EHRENBERG), *Heterohelix* sp. and scarce *Globotruncana schneegansi* SIGAL, *Rugoglobigerina* sp. and *Globigerina* ? *cretacea* D'ORBIGNY. The spines of *Grimsdaleinella spinosa* are delicate and break off easily during preparation of the sample or handling of the specimens. This might be a reason why the species has not yet been found elswhere in beds of equivalent age and representing a similar environment.

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Plate I. *Grimsdaleinella*, n. gen.

All figures × 75

Figs. 1–11. *Grimsdaleinella spinosa*, n. gen., n. sp.

1a, Side view of holotype showing asymmetrically situated comma shaped aperture in ultimate chamber. Initial chamber globular, later ones becoming increasingly elongated, tapering to spines which are partly broken off with the exception of that of the last chamber.

1b, View of opposite side of holotype.

1c, Apertural view of holotype showing comma shaped aperture.

2, 3a, Side views of paratypes showing asymmetrically situated comma shaped apertures in ultimate chambers. Tapering spines are partly broken off.

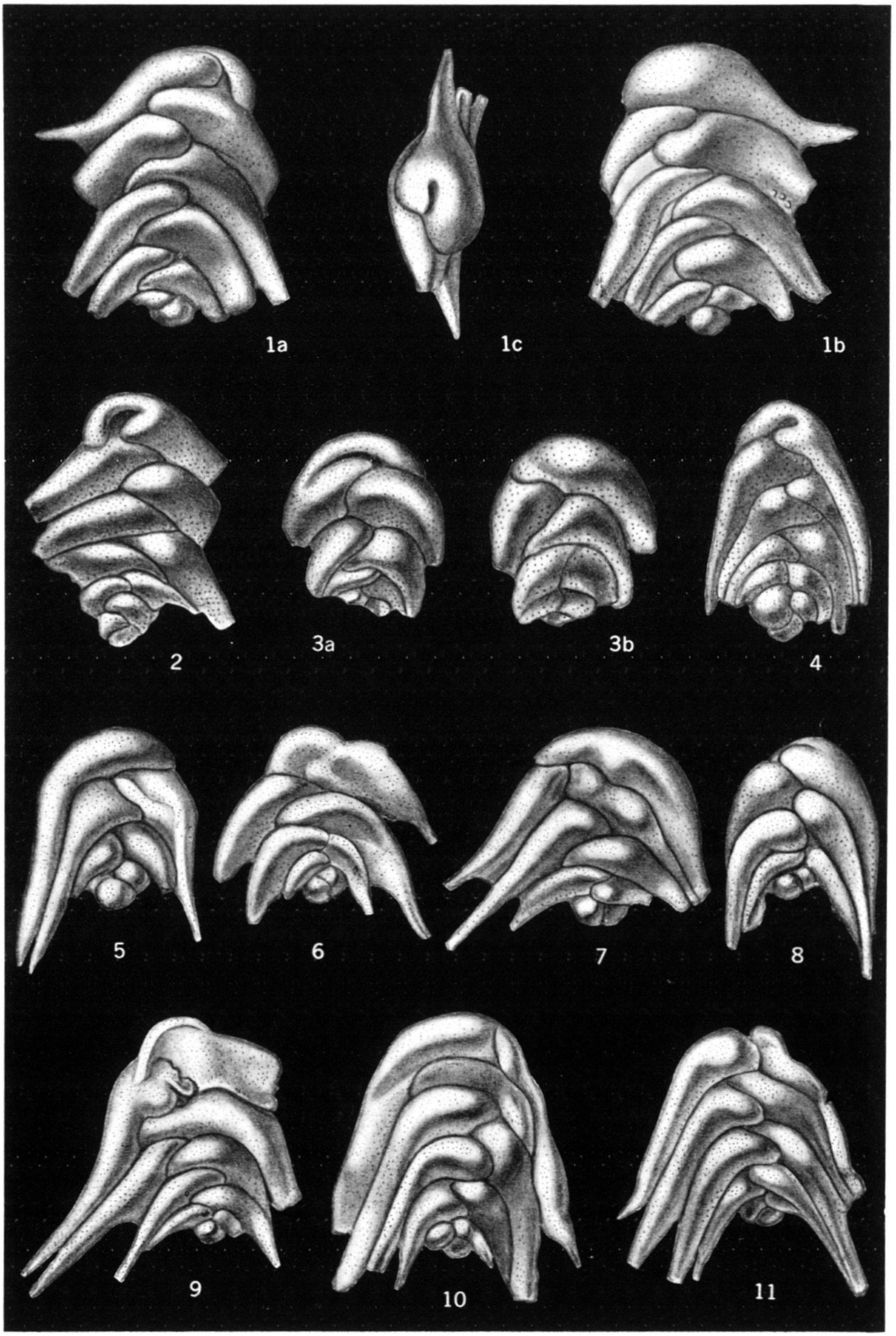
3b, View of opposite side.

4, Side view of paratype showing asymmetrically situated comma shaped aperture in ultimate chamber. Tapering spines in most chambers well preserved.

5–8, Side views of paratypes with well preserved chambers tapering to spines. The angles of the spines to the longitudinal axis vary considerably in the figured specimens.

9–11, Side views of large paratypes showing well preserved chambers tapering to spines. The thin walled ultimate chambers are somewhat deformed and compressed.

(Figured specimens deposited in the Museum of Natural History, Basle [holotype C 2519, paratypes C 2520–C 2529])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