

KARRERIELLA OBTURACULOIDES,  
A NEW AGGLUTINATED BENTHIC FORAMINIFERAL SPECIES

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INTRODUCTION

In Quaternary samples from the Rio Grande Rise in the southwest Atlantic Ocean, a benthic agglutinated foraminiferal species occurs that has also been observed in other medium to deep-water Atlantic (Cushman, 1922), Gulf of Mexico (Flint, 1897), Indian Ocean (Boltovskoy, 1978) and Pacific (Taylor, in preparation) localities. It has been variously referred to *Gaudryina filiformis* Berthelin, *G. pseudofiliformis* Cushman and *G. bradyi* Cushman. However, a careful examination of type illustrations indicates no affinity of the present specimens to these, or any other described species. Thus, a new species is required to accommodate these specimens.

MATERIALS

Materials used for this study were from the following localities:

- (1) Quaternary; DSDP Site 357 (Leg 39) on the Rio Grande Rise, southwest Atlantic Ocean; latitude 30° 00.25'S, longitude 35° 33.59'W. Core levels: core 1, Section 1, 82-92 cm; core 1, Section 2, 80-86 cm.
- (2) Recent; HMS *Challenger*, Station 24, off Culebra Island, north of St. Thomas Island, West Indies; depth, 720 meters.

METHODS

Thirty specimens from two localities were examined variously in reflected light, transmitted light, and with a scanning electron microscope to study the test surface, apertural form and position, and the test interior in whole and half longitudinal, and cross sections. For sectioning, specimens were embedded in Lakeside 70 and carefully ground on 15-micron wet/dry emery paper until the inner structure of the test was exposed. The specimens were then immersed in alcohol overnight to dissolve the Lakeside 70, mounted on a plug, coated with gold, and illustrated with a scanning electron microscope. Two specimens were etched at the base to show

early chamber arrangement using the method described by Plummer (1951).

Scanning electron micrographs of some of the sectioned, etched, and other selected specimens were taken with an ISI Super-111A Scanning Electron Microscope using Polaroid NP 55 film.

TYPE SPECIMENS

The figured holotype, figured paratypes, and unfigured paratypes are deposited in the United States National Museum, Washington, D. C.

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SYSTEMATIC DESCRIPTION

Suborder TEXTULARIINA

Delage and Hérouard, 1896

Superfamily ATAXOPHRAGMIACEA

Schwager, 1877

Family EGGERELLIDAE Cushman, 1937

Subfamily EGGERELLINAE Cushman,  
1937

Genus *Karreriella* Cushman, 1933

*KARRERIELLA OBTURACULOIDES*, n. sp.

Plate 1, Figures 1-8

*Gaudryina filiformis* Berthelin. FLINT, 1899, p. 287, pl. 33, fig. 2 (non *G. filiformis* BERTHELIN, 1880, p. 25, pl. 1, fig. 8).

*Gaudryina pseudofiliformis* Cushman. CUSHMAN, 1922, p. 78, pl. 13, fig. 5 (non *Gaudryina pseudofiliformis* CUSHMAN, 1911, p. 70, fig. 3).

*Karrieriella bradyi* (Cushman). BOLTOVSKOY, 1978, p. 162, pl. 4, figs. 28, 29 (non *Gaudryina bradyi* CUSHMAN, 1911, p. 67, fig. 107).

**Diagnosis:** A species of *Karrieriella* with an elongate, minimally tapering test, and sutures perpendicular to the longitudinal axis.

**Description:** Test free, elongate, megalospheric specimens initially triserial and circular in section, later becoming biserial and slightly compressed; microspheric specimens with five globular chambers in the initial whorl, then becoming triserial, and rounded in section, finally biserial and compressed in the later stage; sutures slightly to moderately incised, perpendicular to the longitudinal axis; wall thick and finely agglutinated, distinctly canaliculate, with fine internal pores terminating beneath the test surface; aperture a straight slit, parallel to and slightly above the inner margin of the final chamber, may be bordered by a slightly raised lip.

**Derivation of Name:** From the Latin, *obteraculum*, n., stopper, plug, = *-oides* like, resembling, having the form of, with reference to the shape of the test.

**Dimensions:** Maximum length, 1500 microns; maximum width 400 microns.

**Types and Occurrence:** Oligocene to Recent. Holotype (USNM 383403), figured paratypes (USNM 383404), and unfigured paratypes

(USNM 383405), all from DSDP Site 357 (Leg 39); Rio Grande Rise in the southwest Atlantic Ocean; latitude 30°00.25'S, longitude 30°33.51'W; Core 1, Section 1, 82-92 cm Quaternary. Figured paratype (USNM 383406) and unfigured paratype (USNM 383407), both from HMS *Challenger* Station 24, off Culebra Island, North of St. Thomas Island, West Indies; depth, 720 meters. The species also has been reported from Recent samples in the Gulf of Mexico, off the west coast of Cuba at 720 meters, in the Indian Ocean at 2237 meters and on the Lord Howe Rise in the Pacific Ocean at 1399 meters.

**Remarks:** In recent literature this species frequently has been referred to *Gaudryina bradyi* Cushman, which it superficially resembles. However, *G. bradyi* differs from the present species in tapering strongly toward the base and in the oblique sutures (approximately 25° to the longitudinal axis). *Karrieriella obturaculoides* also has been referred to *Gaudryina pseudofiliformis* Cushman, but in addition to the radically different aperture, the latter species is also considerably more elongate and compressed than the present species. *Gaudryina filiformis* Berthelin is much smaller and more elongate than *K. obturaculoides*. Most of the specimens observed in this material were megalospheric specimens. As asexual megalospheric forms normally dominate foraminiferal

## PLATE 1

### *Karrieriella obturaculoides*, n. sp.

1,2. Side view of megalospheric holotype (USNM 383403). 1, view showing sutures perpendicular to longitudinal axis, X 130. 2, same enlarged to show slightly areal aperture parallel to inner margin of final chamber, X 225. DSDP Site 357, Core 1, Section 1, 82-92 cm.

3. Basal view of etched megalospheric paratype (USNM 383404) showing rounded section and triserial arrangement of some initial chambers, X 100. DSDP Site 357, Core 1, Section 1, 82-92 cm.

4,5. Oblique view of megalospheric paratype (USNM 383404). 4, specimen showing rounded base, becoming slightly compressed in later chambers, X 100. 5, enlargement of areal aperture, showing partly developed apertural lips, X 485. DSDP Site 357, Core 1, Section 1, 82-92 cm.

6. Half section of megalospheric paratype (USNM 383404), showing thickened walls of specimen and chamber arrangement near proloculus, X 65. DSDP Site 357, Core 1, Section 1, 82-92 cm.

7. Edge view of megalospheric paratype (USNM 383404) showing slightly compressed test and depressed sutures, X 50. DSDP Site 357, Core 1, Section 1, 82-92 cm.

8. Side view of microspheric paratype (USNM 383406) showing the characteristic small proloculus, X 115, HMS *Challenger* Station 24, off Culebra Island, West Indies, depth 720 meters.

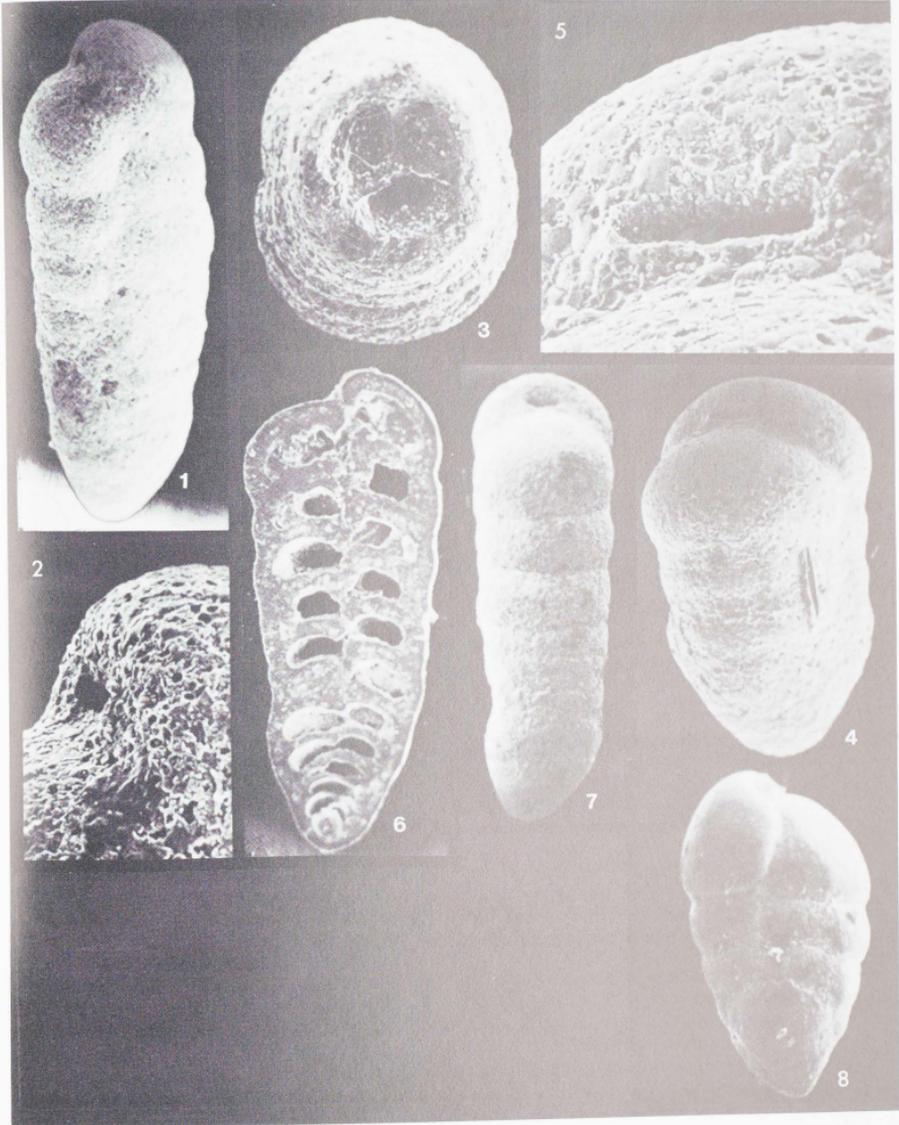


PLATE 1

populations the scarcity of microspheric forms in these relatively small samples is not remarkable.

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### AMPLECTODUCTINA, A NEW FORAMINIFERAL GENUS IN THE SIPHOGENERINOIDIDAE

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#### ABSTRACT

*Amplectoductina*, a new genus of the Tubulogenerininae, is distinguished by its entirely uniserial chamber arrangement. The type of the new genus is *Amplectoductina carnatolintra*.

Various genera of the foraminiferal family Siphogenerinoididae have been defined on the basis of such morphological characters as the number of initial chambers, apertural configuration, and the orientation of the toothplate in successive chambers (Saidova, 1981; Loeblich and Tappan, 1982).

Among benthic foraminifera in Pleistocene to late Oligocene samples from DSDP Site 357 (Leg 39) on the Rio Grande Rise is a species of Siphogenerinoididae which, except for being entirely uniserial, fits all criteria used to define Tubulogenerininae. Although rare in individual samples, it is found at several core levels. As all specimens are uniserial, the species is most likely uniserial in both generations, rather than representing the megalospheric generation of an initially triserial or biserial species. This totally uniserial early chamber arrangement, in conjunction with other characteristics, excludes the species from previously described genera. There-

fore, a new genus is required for placement of the species.

The subfamily Tubulogenerininae, as previously defined (Saidova, 1981), included all those genera with tests triserial or biserial in the early stage, later becoming uniserial, whose triserial ancestry is reflected internally by successive hemicylindrical toothplates each oriented 120° from the preceding. The aperture is terminal and circular, with a short neck or thickened rim. Specimens of the new genus display a hemicylindrical toothplate oriented at 120° from the preceding, indicating triserial ancestry. Rather than erect a new subfamily for this probably closely related genus, the subfamily Tubulogenerininae Saidova (1981) is herein emended to include entirely uniserial species as well.

Twenty-six specimens from fifteen core levels at a single locality were studied under a binocular microscope. Both transmitted and reflected light were used to determine the morphologic variation, and the nature of an internal toothplate. The outer wall was partially removed from three specimens using the method described by Plummer (1951). Scanning electron micrographs were taken with an ISI-111A Scanning Electron Microscope, and Polaroid NP 55 film.