

Proceedings of the Eighth International Workshop on Agglutinated Foraminifera



IWAF-8

Cluj-Napoca 2008

Edited by:
M.A. Kaminski
& **S. Filipescu**

**Proceedings of the Eighth International
Workshop
On Agglutinated Foraminifera
(Cluj-Napoca, Romania, September 7-13, 2008)**

Edited by

Michael A. Kaminski
Earth Sciences Department,
King Fahd University of Petroleum & Minerals,
Dhahran, 31261, Saudi Arabia

and

Sorin Filipescu
Department of Geology,
Babeş-Bolyai University,
Str. Kogălniceanu 1, Cluj-Napoca, 400084, Romania

Published by

The Grzybowski Foundation

Grzybowski Foundation Special Publication No. 16

***Cribrostomoides carapitanus*, n.sp., a new foraminiferal species from the Miocene of eastern Venezuela**

MICHAEL A. KAMINSKI¹, SANDRA CRESPO DE CABRERA², and IRUMAR GONZALEZ²

1. Department of Earth Sciences, University College London, Gower Street, London WC1E 6BT, U.K; e-mail: m.kaminski@ucl.ac.uk. *Current address:* Earth Sciences Department, King Fahd University of Petroleum & Minerals, Dhahran. 31261, Saudi Arabia; e-mail: kaminski@kfupm.edu.sa

2. Laboratorio Geologico El Chaure, PDVSA, Puerto la Cruz, Anzoategui State, Venezuela

ABSTRACT

The new species *Cribrostomoides carapitanus* is described from the mid-Miocene of the Carapita Formation of eastern Venezuela. The species is distinguished by its small dimensions, broad periphery, few chambers, and very finely agglutinated wall structure. The species is common in the middle Miocene of the Eastern Basin in Venezuela.

INTRODUCTION

The Carapita Formation of eastern Venezuela consists of a thick succession of deep-marine shales with localised minor turbidites deposited in a bathyal setting. The calcareous benthic foraminifera of the Carapita Formation were first described in the late 1930s by Hollis Hedberg, but the original taxonomic work concentrated on the calcareous benthic foraminifera. However, the formation also contains levels with abundant agglutinated foraminifera that can sometimes dominate the assemblage. The agglutinated foraminifera from the Carapita Formation to this day remain largely undescribed. The purpose of this study is to describe a new species that can be common in the mid-Miocene of the Carapita Formation. The new species *Cribrostomoides carapitanus* can be confused with the Paleogene species *C. trinitatensis* Cushman & Jarvis, but differs in possessing fewer chambers in the last whorl.

Study Area

The Carapita Formation described by Hedberg (1937), crops out in the Quebrada (stream) Carapita, a tributary of the Querecual River. It is located 2 to 5 km north of Santa Inés town, in Anzoátegui State of eastern Venezuela. This formation outcrops as a continuous band of approximately 30 km along the southern flank of the Bergantín anticline and also to the east, in the northern Monagas State (Lamb, 1964) in the Aragua River. In the subsurface it is recognised in the north of Monagas state, extending to the east under the Gulf of Paria (Hedberg, 1950).

The Carapita Formation is composed of black to dark grey, massive, homogeneous, calcareous, foraminiferal-rich shales. Locally these could be pyritic or glauconitic. Very few sandstone layers are

found, especially at the base in the transition with the underlying Naricual Formation and also in the subsurface of the north of Monagas (Jusepín and Cachipo area), to the southeast of the type locality where the deep-water turbiditic sandstones, the Chapapotal Member, have been recorded (Lamb & Sulek, 1965).

The thickness of this formation varies from 4.0–6.0 km in the subsurface. The lower boundary is transitional with the Naricual and Capaya formations but unconformably underlies the Upper Miocene–Pliocene La Pica Formation. On the basis of foraminifera an Oligocene to Middle Miocene age has been determined (Lamb & Sulek, 1965; Stainforth, 1971).

METHODS

Cuttings samples from the Jusepín J-496X borehole were washed using normal laboratory methods, and specimens were picked into cardboard slides. Holotype and paratype specimens were placed into separate slides, and photographed using the SEM at University College London.

SYSTEMATIC TAXONOMY

Suborder LITUOLINA Lankester, 1885
Superfamily RECURVOIDACEA Alekseychik-Mitskevich, 1973

Family AMMOSPHAERIODINIDAE Cushman, 1927
Subfamily RECURVOIDINAE Alekseychik-Mitskevich, 1973

Genus *Cribrostomoides* Cushman, 1910

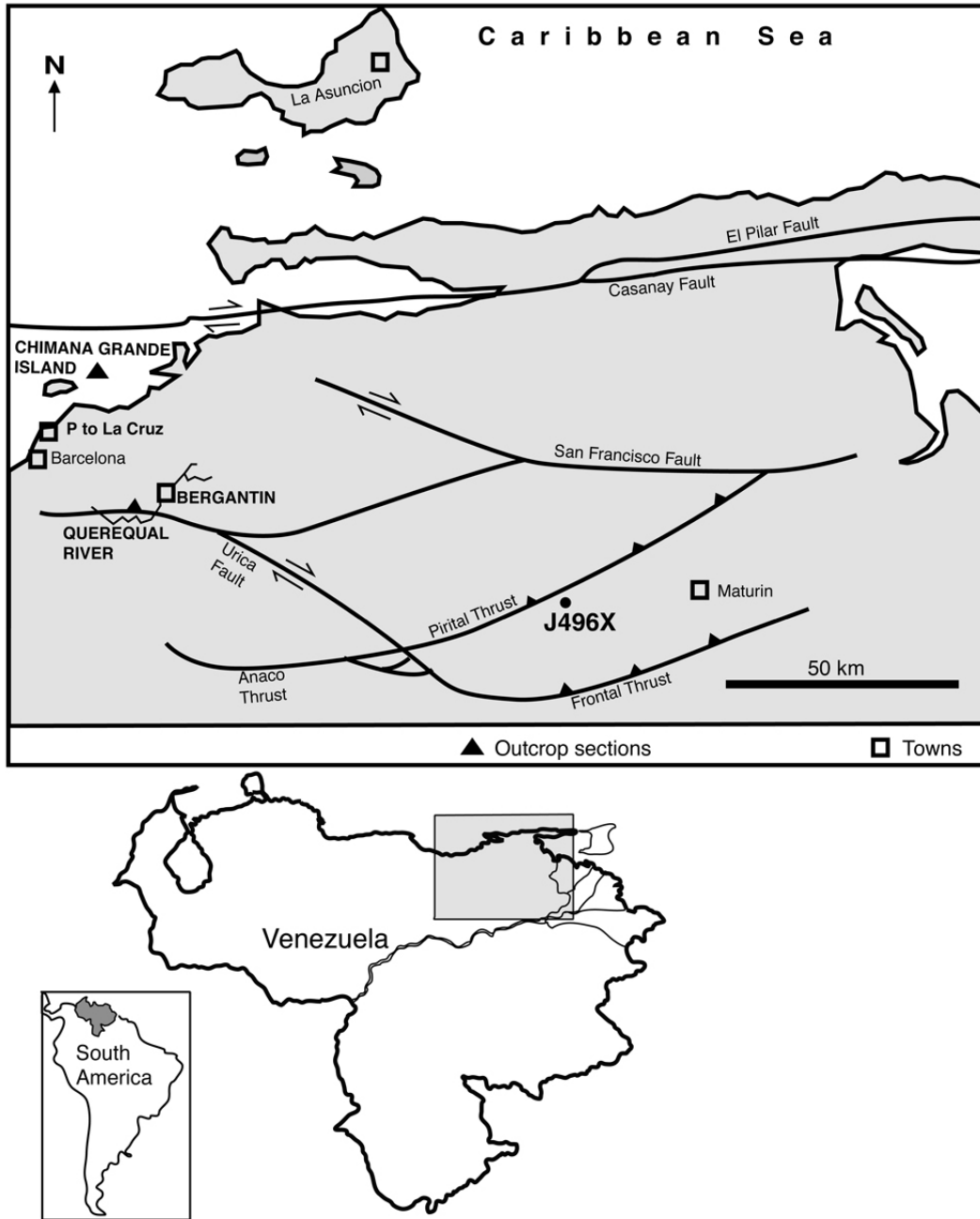


Figure 1. Location map of the J-496X Well, North of Monagas, eastern Venezuela Basin. Structural elements after Bellizia *et al.* (1976).

The genus *Cribrostomoides* was transferred to the Recurvoidinae by Kaminski (2004), owing to the streptospiral coiling of the type species, *Cribrostomoides subglobosus* Cushman, 1910.

***Cribrostomoides carapitanus* n. sp.**

Plate 1, figs 1–5

Description. Test free, small for the genus, thick, with broadly rounded periphery, circular in outline. Chambers few in number, coiled planispirally in two whorls, with about five chambers in the last whorl. Sutures slightly depressed, radial, straight, appearing

as thin lines on the surface of the test. Umbilicus is depressed, narrow, involute. Wall thin, finely agglutinated, with a very smooth surface. Aperture multiple, consisting of about 5–6 small round openings, at the base of the last chamber, without lips.

Remarks. The species resembles *Cribrostomoides trinitatensis* Cushman & Jarvis in size and the nature of the test wall, but differs in having fewer chambers, rounded apertures, and a higher apertural face. It is smaller and has a thinner wall than the type species *C. subglobosus*.

Specimens from the lower middle Miocene of the Carapita Formation are accompanied by an outer-neritic to upper bathyal assemblage of agglutinated and calcareous benthic foraminifera with common *Uvigerina*, *Bolivina*, *Bulimina*, and *Globobulimina* species. The specimens are dark in colour with pyrite infillings. The agglutinated component of the assemblage includes common trochamminids, *Ammosphaeroidina*, *Cyclamina*, and *Praesphaerammina*. The composition and dark colouration of the accompanying assemblage points to a dysoxic, organic-rich environment.

Material. Twelve specimens from the type level.

Dimensions. Diameter of holotype: 260 microns, width across last chamber: 250 microns. Maximum diameter of largest paratype (slightly deformed specimen): 350 microns.

Derivation of name. From the Carapita Formation of eastern Venezuela.

Type Locality. Jusepín oil field, Monagas State, Eastern Basin of Venezuela.

Type Level. Middle Miocene (lower part), Carapita Formation, well J-496X, 17,550-17,555 feet.

Type Specimens. The holotype (plate 1, figs 1a-b) and four paratypes (Plate 1, figs 2-5) are deposited in the Department of Palaeontology, Natural History Museum, London (BMNH PF68315-68319). Additional paratypes are deposited in the Pedro Bermúdez Reference Center in INTEVEP, Los Teques (near Caracas), Venezuela, and in the collection of the first author.

ACKNOWLEDGEMENTS

We thank PDVSA for permission to publish this new species. Ken Finger (U. Berkeley) and Sorin

Filipescu (BBU) kindly reviewed a draft of the manuscript. This is contribution nr. 91 of the Deep-Water Agglutinated Foraminiferal Project.

REFERENCES

- Bellizia, A., Pimentel, N. & Bajo, R. 1976. Mapa geologic structural de Venezuela. Caracas Ministerio de Minas e Hidrocarburos, Escala 1:50,000.
- Hedberg, H. 1937. Foraminifera of the middle Tertiary Carapita Formation of northeastern Venezuela. *Journal of Paleontology*, **11**, 661-697.
- Hedberg, H.D. 1937. Stratigraphy of the Río Querecual section of northeastern Venezuela. *Geological Society of America Bulletin*, **48** (12), 1971-2024.
- Hedberg, H.D. 1950. Geology of eastern Venezuela. *Geological Society of America Bulletin*, **61**, 1173-1216.
- Kaminski, M.A. 2004. The Year 2000 classification of agglutinated foraminifera. In: Bubík, M., & Kaminski, M.A., (eds.), *Proceedings of the Sixth International Workshop on Agglutinated Foraminifera*. Grzybowski Foundation Special Publication, **8**, 237-255.
- Lamb, J.L. 1964. The geology and paleontology of the Río Aragua surface section, Serranía del Interior, State of Monagas, Venezuela. *Asociación Venezolana de Geología, Minería y Petróleo. Boletín Informativo*, **7** (4), 111-123.
- Lamb, J.L. & Sulek, J.A. 1965. Miocene turbidites in the Carapita Formation of eastern Venezuela. *Asociación Venezolana de Geología, Minería y Petróleo. Boletín Informativo*, **8** (3), 82 pp.
- Stainforth, R.M. 1971. La Formación Carapita de Venezuela oriental. *IV Congreso Geológico Venezolano, Caracas, Boletín de Geología, Publicación Especial*, **5**, 433-463.



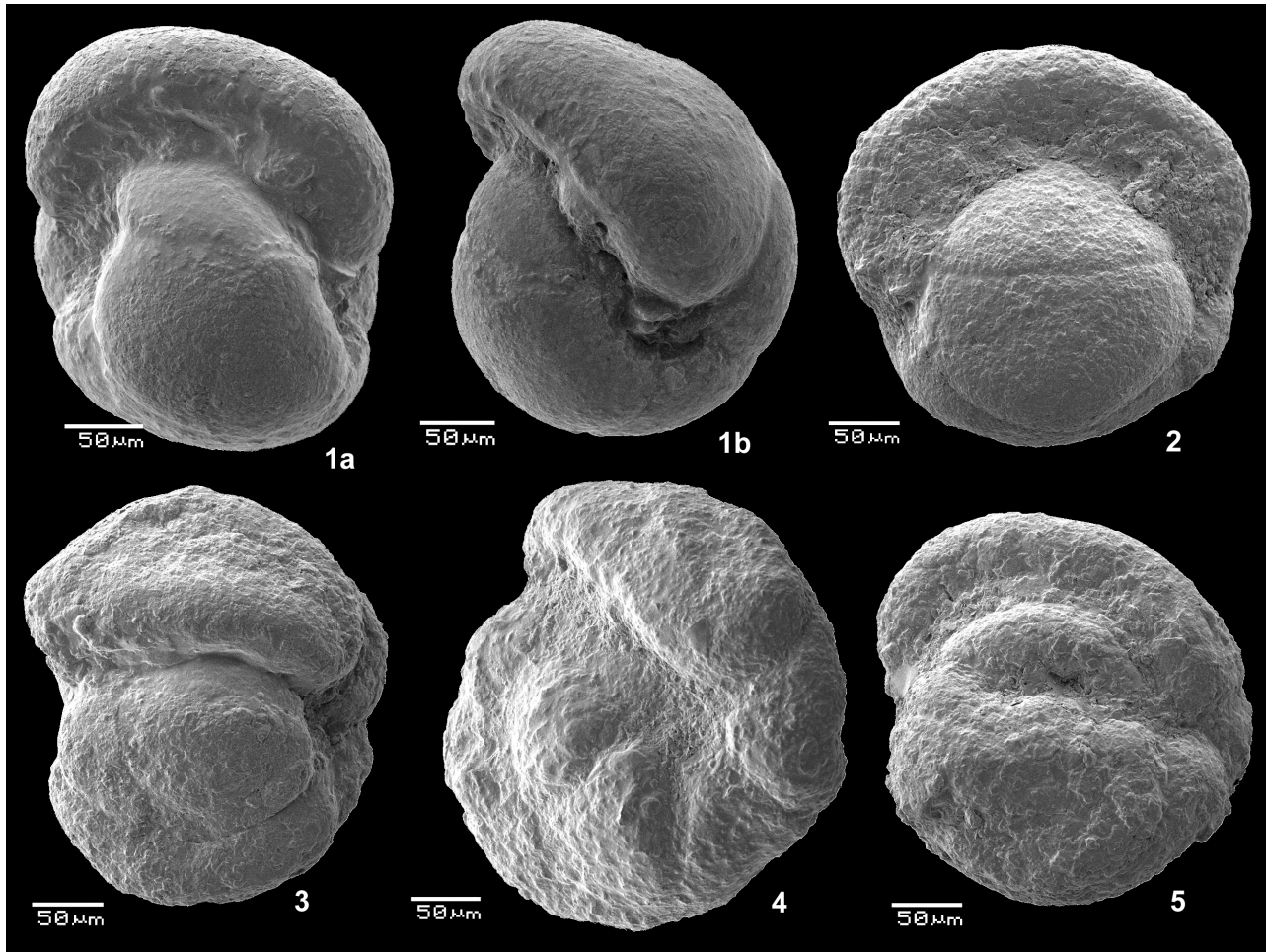


Plate 1. 1. Holotype (BMNH PF68315), Carapita Formation, J-496X well, 17,550–17,555'. 2–5. Paratypes (BMNH PF68316–68319), Carapita Formation, J-496X well, 17,550–17,555'.