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M.A. Kaminski
& S. Filipescu
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Edited by

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

and

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

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**Cribrastomoides 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, Anzoátegui State, Venezuela

**ABSTRACT**

The new species *Cribrastomoides 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 *Cribrastomoides 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 Paría (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 Narical 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 Chapatotal 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 Narical 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 **Ammosphaeroidinidae** Cushman, 1927
Subfamily **Recurvoidinidae** Alekseychik-Mitskevich, 1973

Genus **Cribrastomoides** Cushman, 1910
The genus *Cribrostomoides* was transferred to the Recurvina 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.*

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


**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. 

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**REFERENCES**


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'.