
SHORTER COMMUNICATIONS

***Tortaguttus stiloensis*, a New Species of Benthic
Foraminifera from the Middle Pleistocene of
Calabria, Italy¹**

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Abstract. *Tortaguttus stiloensis*, a new species of benthic unilocular foraminifera of the suborder Lagenina, is described from Middle Pleistocene marine sediments of Calabria, Italy. This species is characterized by radiating elevated costae on the surface of a double marginal carinae connected by numerous cross-struts. Previously known occurrences of *Tortaguttus* are restricted to the Pacific rim. However, the occurrence of *Tortaguttus stiloensis* in the Mediterranean region indicates that this genus is cosmopolitan in neritic-depth waters. The widespread distribution of species referable to *Tortaguttus* so soon after its appearance in the Quaternary indicates either a highly efficient dispersal mechanism or that the genus has a much longer and yet unrecorded fossil record.

During an ongoing biostratigraphic and sedimentologic analysis of Oligocene-Pleistocene-aged sections from Calabria, Italy, a relatively common species of foraminifera was observed that is not referable to previously described taxa. The new species is referable to the unusual unilocular foraminiferal genus *Tortaguttus* Barrick, Beverage, Patterson & Schubert, 1989, described from the Pleistocene of California. Prior to the discovery of the new species, only two other species referable to *Tortaguttus* have been described. *Tortaguttus timmsensis* (Cushman & Gray, 1946), the type species of the genus, is common in Middle Pleistocene to Recent marine sediments from along the entire west coast of North America. The second species, *Tortaguttus sigmoidella* (Cushman, 1933), is known only from Recent sediments offshore of Raihira Atoll in the south Pacific Ocean. The discovery of this new species in Pleistocene sediments from southern Italy is important because it indicates that: (1) the genus is not restricted to the Pacific Rim but is cosmopolitan at neritic water depths; (2) the genus may not have originated on the west coast of North America as was originally supposed; (3) the cosmopolitan distribution of this genus so soon after its first appearance in the fossil record suggests either a highly efficient dispersal mechanism; or (4) the genus has a much longer and as yet unrecorded fossil record.

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MATERIALS AND METHODS

Specimens of the new species were identified in two Middle Pleistocene samples collected on 24 May 1990 by William Cavazza and R. Timothy Patterson, from tan clays in the "Stilo" stratigraphic section on the road to Bivongi approximately 10 km inland from the intersection with Hwy 106—the town of Monasteraci is at the crossroads—in Calabria, Italy. Exact stratigraphic horizons are given in the "Types and Occurrences" section of the systematic description.

Illustrations were made with a JEOL JSM 6400 scanning electron microscope using Polaroid® NP 55 film. Figured holotype, paratypes, and unfigured paratypes are deposited in the micropaleontological collections of the Geological Survey of Canada in Ottawa, Ontario.

TAXONOMIC ACCOUNT

Suprageneric classification follows that of Patterson & Richardson (1987) and Loeblich & Tappan (1987).

Suborder Lagenina Delage & Hérouard, 1896

Superfamily Nodosariacea Ehrenberg, 1838

Family Ellipsolageniadae A. Silvestri, 1923

Subfamily Ellipsolageninae A. Silvestri, 1923

Genus *Tortaguttus* Barrick, Beverage, Patterson & Schubert, 1989

Tortaguttus stiloensis n. sp.

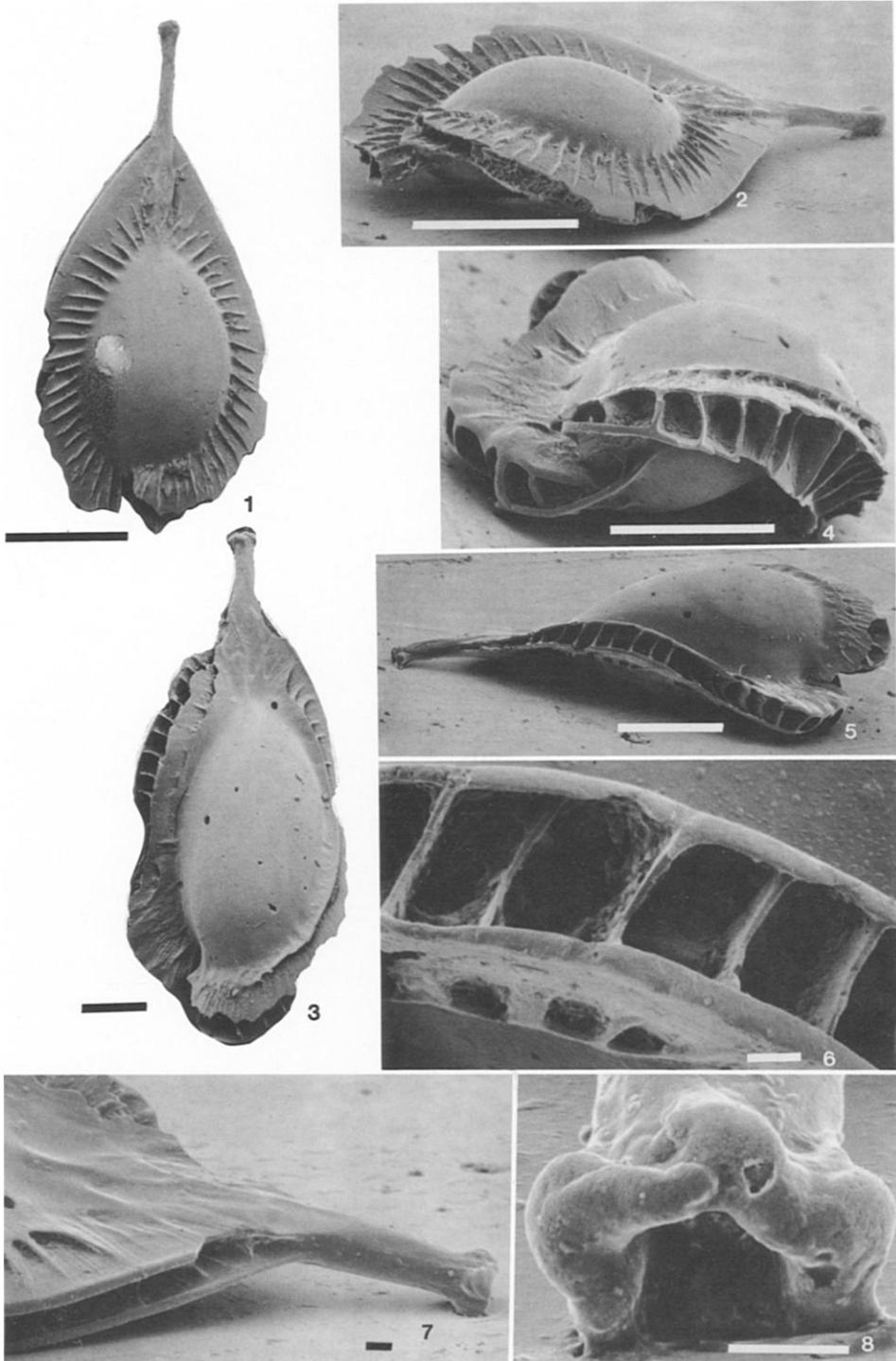
(Figs. 1–8)

Diagnosis. A long-necked species of *Tortaguttus* characterized by a single band of cross-struts along the peripheral margin.

Description. Test free, unilocular, hyaline, finely perforate, elongate, compressed in transverse section, wall calcareous, a double sigmoidal lateral carinae extends from halfway up the neck to the base where the carinae is discontinuous, surface of test body smooth although some specimens are characterized by radiating elevated costae on the surface of the lateral carina; aperture terminal and radiate within a phialine lip, at the end of an elongate neck.

Type specimens and occurrences. Illustrated holotype (GSC 104702), illustrated paratype (GSC 104703) and unillustrated paratypes (six specimens—GSC 104704) from Patterson Sample 1081 (CA 27, Middle Pleistocene) from 1,315 m above the base of the "Stilo" section (38°27'12"N, 4°5'02"E). Two additional unillustrated paratypes (GSC 104705) are taken from Patterson Sample 1083 (CA 29, Middle Pleistocene) from 1,345 m above the base of the measured section (38°26'58"N, 4°05'39"E). Age of the samples is based on planktic foraminiferal biostratigraphy (Patterson et al., 1993) and corroborative evidence provided by a ⁸⁷Sr/⁸⁶Sr ratio date of 0.7 Ma from Patterson Sample 1082 (CA 28) measured at 1,325 m above the base of the section.

Remarks. *Tortaguttus stiloensis* differs from *Tortaguttus timmsensis* (Cushman & Gray, 1946), in having only a single cross-strutted lateral carina structure rather than two. Most specimens of *Tortaguttus stiloensis* also are characterized by a distinctive radiating costae on the carina, absent on *Tortaguttus timmsensis*.



Tortaguttus sigmoidella (Cushman, 1933) differs from *Tortaguttus stiloensis* in having a short test and a very thin and narrow lateral carina.

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FIGS. 1–8. *Tortaguttus stiloensis* n. sp. Fig. 1. Longitudinal view of paratype (GSC 104703) showing pronounced radiating costae on wide carina. Scale bar represents 100 μm . Fig. 2. Edge view of same specimen showing compressed test. Scale bar represents 100 μm . Fig. 3. Longitudinal view of holotype (GSC 104702) showing fewer radiating costae and partial development of a secondary lateral carinae. Scale bar represents 100 μm . Fig. 4. End view showing sigmoidal arrangement of carina. Scale bar represents 100 μm . Fig. 5. Edge view showing double carina separated by lateral cross-struts. Scale bar represents 100 μm . Fig. 6. Enlargement of Fig. 5 showing details of the cross-struts. Fig. 7. Enlargement of neck showing lateral carina terminating on the neck. Scale bar represents 10 μm . Fig. 8. Enlargement of phialine radiating aperture. Scale bar represents 10 μm .