

VOORTHUYSENIELLA (PROBLEMATICA)
FROM THE PLEISTOCENE OF THE TEXAS CONTINENTAL SHELF

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A cuttings sample, predominantly composed of mollusk fragments with subsidiary quartz and minor glauconite, was obtained from a well located in the Brazos area of offshore Texas. This sample (approximately 10 ml of dry residue) yielded a rich foraminiferal fauna. Twenty-seven benthonic species, with over 500 individuals, and seven planktonic species with over 30 individuals were recorded. The associated fauna and flora is composed of ostracods, bryozoa, and calcareous algae. The fossil assemblage indicates a middle neritic (50'-300' water depth) environment of deposition and an upper Pleistocene age for the sample.

While examining this sample a representative of the genus *Voorthuyseniella* Szczechura (1969) was retrieved. As little attention has been accorded this genus by New World paleontologists it is believed advisable to publish this note in order that interest be generated in this organism. It is hoped that additional data may help solve the problems of the nature and affinities of the taxon.

Voorthuyseniella was first recorded from the Gulf Coast province by Keij (1970). He recorded *V. occidentalis* Keij from Recent samples from the Stetson Bank and Claypile Bank areas of offshore Texas with a bathymetric range of 27-36 metres, and *V. alabamensis* Keij from the Oligocene of Little Stave Creek and St. Stephens Bluff, Alabama. Haman and Kohl (1976) have discussed the occurrence of *V. alabamensis* in the Alabama Oligocene and extended the range of this form into the Eocene at Little Stave Creek, Alabama. They further established a new species *V. stavensis*, which also occurred in the Oligocene and Eocene section of the same locality. A single test tentatively assigned as *Voorthuyseniella* cf. *irregularis* was recorded by Keij (*ibid.*) from the basal Red Bluff Formation at Shubuta Hill, Wayne County, Mississippi. To our knowledge *Voorthuyseniella* has not been

recorded from the Pleistocene of the Gulf Coast area. Only a single specimen of this taxon was obtained and no attempt has been made to describe the form. The purpose of this paper is simply to record the occurrence, paleobathymetric habitat, and faunal relationships.

Test orientation, morphologic terms and measurement terminology is standardized and based on Szczechura (1969, Pl. 2, figs. 1a, 1b), Keij (1970, text-figure 1), and Haman and Kohl (1976, text-figure 2).

VOORTHUYSENIELLA sp. indet.

Plate 1, figs. 1-7; Plate 2, figs. 1-4

Description: Test calcareous, unilocular, nearly spherical. Test is widest at or just below the middle. Test shows symmetrical cameral inflation from above (Pl. 1, fig. 5). Tubus reasonably flat, only slightly higher on one side than the other. Tubus is widest at the middle, tapering slightly to either end (i.e., towards the lateral apertures) (Pl. 1, fig. 4). Porta is circular to sub-circular (0.65 mm x .045 mm) situated in a bevelled depression (0.15 mm x .095 mm). Tubus pore is sub-circular to elliptical (.032 mm x .039 mm), situated midway between the lateral apertures and in line with them. Test twisting or distortion is not evident. Lateral aperture 'A' is circular to sub-circular, irregular, with a flap-like extension over it (Pl. 1, figs. 1, 6, 7). Lateral aperture 'B' is circular, surrounded by a thick flat rim (Pl. 1, fig. 3, Pl. 2, fig. 1) varying in width from .018 mm to .035 mm. No septa are present. As well as can be determined the test is imperforate, but this is difficult to establish as the test has been affected by solution. Test surface under light microscope examination appears striate, but with SEM examination this is shown to be the effect of differential solution. Solution effect does not appear to be restricted to any particular area of the test but is evident over the camera and tubus alike.

Test Dimensions: Max. length 0.31 mm, max. width 0.24 mm, height 0.24 mm.

Locality: Well cuttings sample (580'-610') Brazos area, Block A-28, offshore Texas.

Stratigraphic Level: upper Pleistocene.

Depository: Specimen deposited in the personal collection of D. Haman.

Remarks: This form shows affinities to *Voorthuyseniella occidentalis* Keij, 1970

(Recent, Gulf of Mexico), but differs in possessing a circular to sub-circular porta. Affinities are also shown to *V. borneensis* Keij, 1970 (Recent, South China Sea), by this taxon but it differs in lacking an arched tubus and not having an elliptical porta. If this present taxon does prove to be a variant of either of the above species, it would necessitate a stratigraphic range extension. The validity of using a well cuttings sample to establish an age or age range may be questioned but the infaunal associations and environmental indicators in this sample relative to the knowledge of the worldwide distribution and association of *Voorthuyseniella* lends credence to this occurrence. Keij (1970) and Haman and Kohl (1976) have reviewed the environmental occurrence and faunal associations of *Voorthuyseniella*. Similarities are shown between this form and *V. dingdenensis* Keij, 1970 (middle Miocene, West Germany), but the sinuous junction between the tubus and camera of *V. dingdenensis* is lacking in our specimen. Also, more pronounced lateral apertures are present in the Texas specimen. *V. lageniformis* Szczechura, 1969 (Eocene, Poland), differs in having a less regularly inflated camera and in having a smaller tubus pore.

V. maxima Keij, 1970 (late Pliocene, Belgium), differs in possessing along slit-like porta.

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LITERATURE CITED

- HAMAN, D., and B. KOHL, 1976, The genus *Voorthuyseniella* (Problematica) at Little Stave Creek, Alabama: Tulane Stud. Geol. Paleont., vol. 12, no. 3, p. 145-156.
- HANTZSCHEL, W., 1975, Treatise on Invertebrate Paleontology, Part W, Miscellanea, Supplement 1, Trace Fossils and Problematica, 2nd. Ed. (ed. C. Teichert), Microproblematica, p. W153-W168, 100 figs.
- KEIJ, A. J., Taxonomy and stratigraphic distribution of *Voorthuyseniella* (Problematica). I and II: Koninkl. Nederl. Akad. Wetens., Proc., (Ser. B), vol. 73, p. 479-499, 8 pls., 7 text-figs.
- SZCZECURA, J., 1969, Problematic microfossils from the upper Eocene of Poland: Rev. Espan. Micropaleontologia, vol. 1, no. 1, p. 81-94, 4 pls., 2 text-figs.

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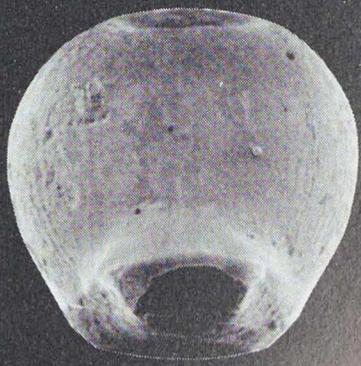
VOORTHUYSENIELLA sp. indet.

PLATE 1

- Figs. 1-5 (1) View to lateral aperture 'A' (2) Side view (3) View to lateral aperture 'B' (4) View to tubus and tubus pore (5) View to porta. (Bar = 100 microns)
- Fig. 6 Lateral aperture 'A'. (Bar = 50 microns)
- Fig. 7 Lateral aperture 'A'. (Bar = 25 microns)

PLATE 2

- Fig. 1 Lateral aperture 'B'. (Bar = 50 microns) Black outline indicates area of enlargement for fig. 4
- Fig. 2 Lateral aperture 'B' looking through camera (main test body) to lateral aperture 'A'. Note absence of septa. (Bar = 10 microns)
- Fig. 3 Same as fig. 2. Focused on coccolith rich debris inside camera (main test body). (Bar = 10 microns)
- Fig. 4 Enlargement of test surface outlined in fig. 1 showing junction of rim around lateral aperture 'B' with main test body and also the extensive differential solution. (Bar = 10 microns)



1



2



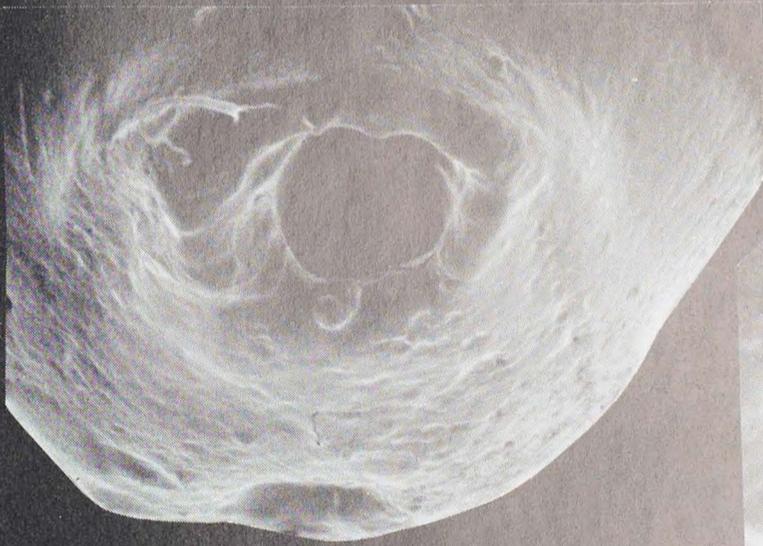
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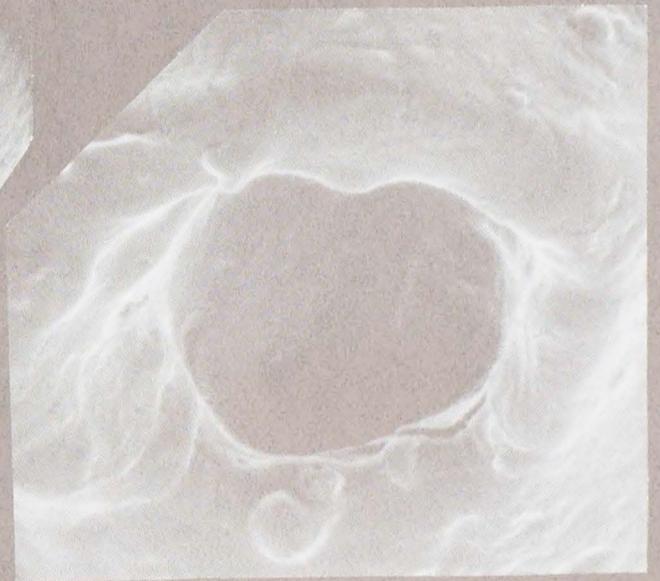
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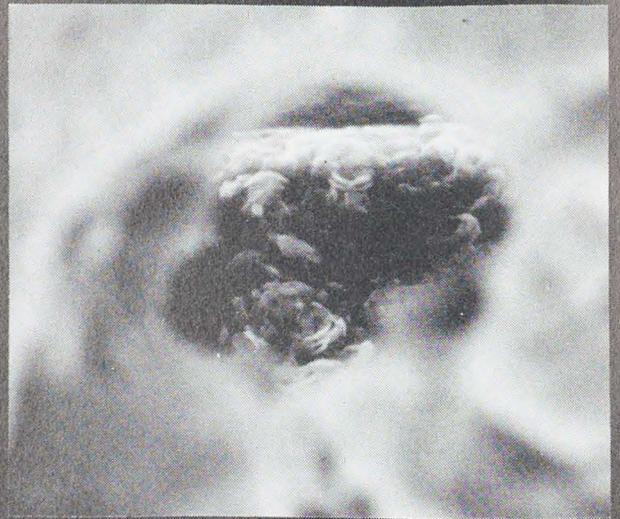
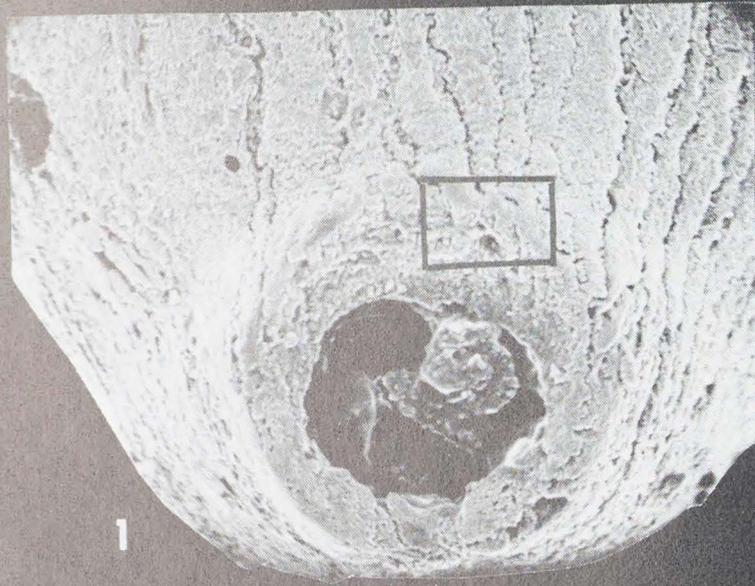


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7

PLATE 1



2

3



4



PLATE 2