

## Paleontological Society

---

Globulospinella, a New Unilocular Foraminiferal Genus, and Designation of a Neotype for Palliolatella avita Patterson and Richardson

Author(s): R. Timothy Patterson

Source: *Journal of Paleontology*, Vol. 62, No. 4 (Jul., 1988), pp. 529-531

Published by: Paleontological Society

Stable URL: <http://www.jstor.org/stable/1305453>

Accessed: 28/06/2010 11:15

---

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/action/showPublisher?publisherCode=sepm> and <http://www.jstor.org/action/showPublisher?publisherCode=paleo>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).



Paleontological Society and SEPM Society for Sedimentary Geology are collaborating with JSTOR to digitize, preserve and extend access to *Journal of Paleontology*.

<http://www.jstor.org>

- . 1964. Stratigraphy and structure of Antler Peak quadrangle, Humboldt and Lander Counties, Nevada. U.S. Geological Survey, Professional Paper 459-A:93.
- , P. E. HOTZ, J. GILLULY, AND H. G. FERGUSON. 1958. Paleozoic rocks of north-central Nevada. American Association of Petroleum Geologists Bulletin, 42:2813–2857.
- ROSS, C. A., AND F. F. SABINS, JR. 1965. Early and Middle Pennsylvanian fusulinids from southeast Arizona. Journal of Paleontology, 39:173–209.
- SALLER, A. H. 1980. Depositional setting of post-Antler Pennsylvanian strata in north-central Nevada. Unpubl. M.S. thesis, Stanford University, Stanford, 115 p.
- , AND W. R. DICKINSON. 1982. Alluvial to marine facies in the Antler overlap sequence, Pennsylvanian and Permian of north-central Nevada. Journal of Sedimentary Petrology, 52:925–940.
- SLADE, M. L. 1961. Pennsylvanian and Permian fusulinids of the Ferguson Mountain Area, Elko County, Nevada. Brigham Young University, Geology Studies, 8:55–92.
- SKINNER, J. W. 1931. Primitive fusulinids of the Mid-continent region. Journal of Paleontology, 5:253–259.
- STAFF, H. VON, AND R. WEDEKIND. 1910. Der Oberkarbon Foraminiferensapropelit Spitzbergens. Bulletin of the Geological Institute of the University of Upsala, 10:81–123.
- STEWART, J. H., AND J. E. CARLSON. 1978. Geologic map of Nevada. U.S. Geological Survey.
- THOMPSON, M. L. 1937. Fusulinids of the subfamily Schubertellinae. Journal of Paleontology, 11:118–125.
- . 1942. New genera of Pennsylvanian fusulinids. American Journal of Science, 240:403–420.
- . 1947. Stratigraphy and fusulinids of pre-Desmoinesian Pennsylvanian rocks, Llano Uplift, Texas. Journal of Paleontology, 21:147–164.
- . 1948. Studies of American Fusulinids. University of Kansas Paleontological Contributions, Article 1, 184 p.
- , AND C. L. FOSTER. 1937. Middle Permian fusulinids from Szechuan, China. Journal of Paleontology, 11:126–144.
- , AND D. N. ZELLER. 1956. *Profusulinella* in western Utah. Journal of Paleontology, 30:333–337.

ACCEPTED 18 FEBRUARY 1988

Fusulinid Biostratigraphy, Inc., provided \$200.00 in support of this article.

*J. Paleont.*, 62(4), 1988, pp. 529–531  
Copyright © 1988, The Paleontological Society  
0022-3360/88/0062-0529\$03.00

## GLOBULOSPINELLA, A NEW UNILOCLAR FORAMINIFERAL GENUS, AND DESIGNATION OF A NEOTYPE FOR PALLIOLATELLA AVITA PATTERSON AND RICHARDSON

R. TIMOTHY PATTERSON<sup>1</sup>

Department of Geological Sciences, University of Southern California, Los Angeles 90089 and  
Department of Earth and Space Sciences, University of California, Los Angeles 90024

ABSTRACT—*Globulospinella*, a new foraminiferal genus of the Lageninae, differs from other genera of the subfamily by having a surface sculpture consisting of numerous elongate processes on a globular test. *Globulospinella porcuspinata* n. sp., the type species, is described. A neotype for *Palliolatella avita* Patterson and Richardson, the type species of *Palliolatella* Patterson and Richardson, is designated.

### INTRODUCTION

UNILOCLAR FORAMINIFERA have long been largely ignored by most foraminiferal researchers due to their generally high diversity and low abundances in most samples. However, three recent major taxonomic revisions (Jones, 1984; Patterson and Richardson, 1987; Patterson and Richardson, 1988) of the long-ranging group will greatly aid taxonomists and stratigraphers to better understand and utilize the family in biostratigraphic and paleoecological studies. Patterson and Richardson (1987; Patterson and Richardson, 1988) largely based their revisions on wall structure, porosity, test shape, apertural configuration, carinal development, and surface sculpture. While examining Miocene samples from DSDP Site 357 (Leg 39), specimens of a new unilocular species were observed which, utilizing the above criteria, are not referable to any previously described genus.

The holotype of *Palliolatella avita* Patterson and Richardson, 1987, the type species of *Palliolatella* Patterson and Richardson, 1987, was lost enroute to the U.S. National Museum. A neotype is herein designated from amongst the paratypes.

<sup>1</sup> Present address: Department of Earth Sciences, Carleton University, Ottawa, Ontario, Canada K1S 5B6.

### MATERIALS AND METHODS

Specimens of *Globulospinella* described in this paper were from DSDP Site 357 (Leg 39) on the Rio Grande Rise, southwest Atlantic Ocean, lat. 30°00.25'S, long. 35°33.59'W. The core level was core 6, section 5, 72–88 cm (Miocene). Illustrations were made with an ISI Super-111A scanning electron microscope and Polaroid NP 55 film.

The holotype, neotype, and figured paratype are deposited in the U.S. National Museum of Natural History, Washington, D.C.

### SYSTEMATIC PALEONTOLOGY

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

Family LAGENIDAE Reuss, 1862  
Subfamily LAGENINAE Reuss, 1862  
Genus GLOBULOSPINELLA n. gen.

*Type species.*—*Globulospinella porcuspinata* n. sp.

*Diagnosis.*—A genus of Lageninae with test surface sculpture consisting of elongate processes.

*Description.*—Test free, unilocular, elongate to globular, circular in cross section; wall calcareous, hyaline to translucent,

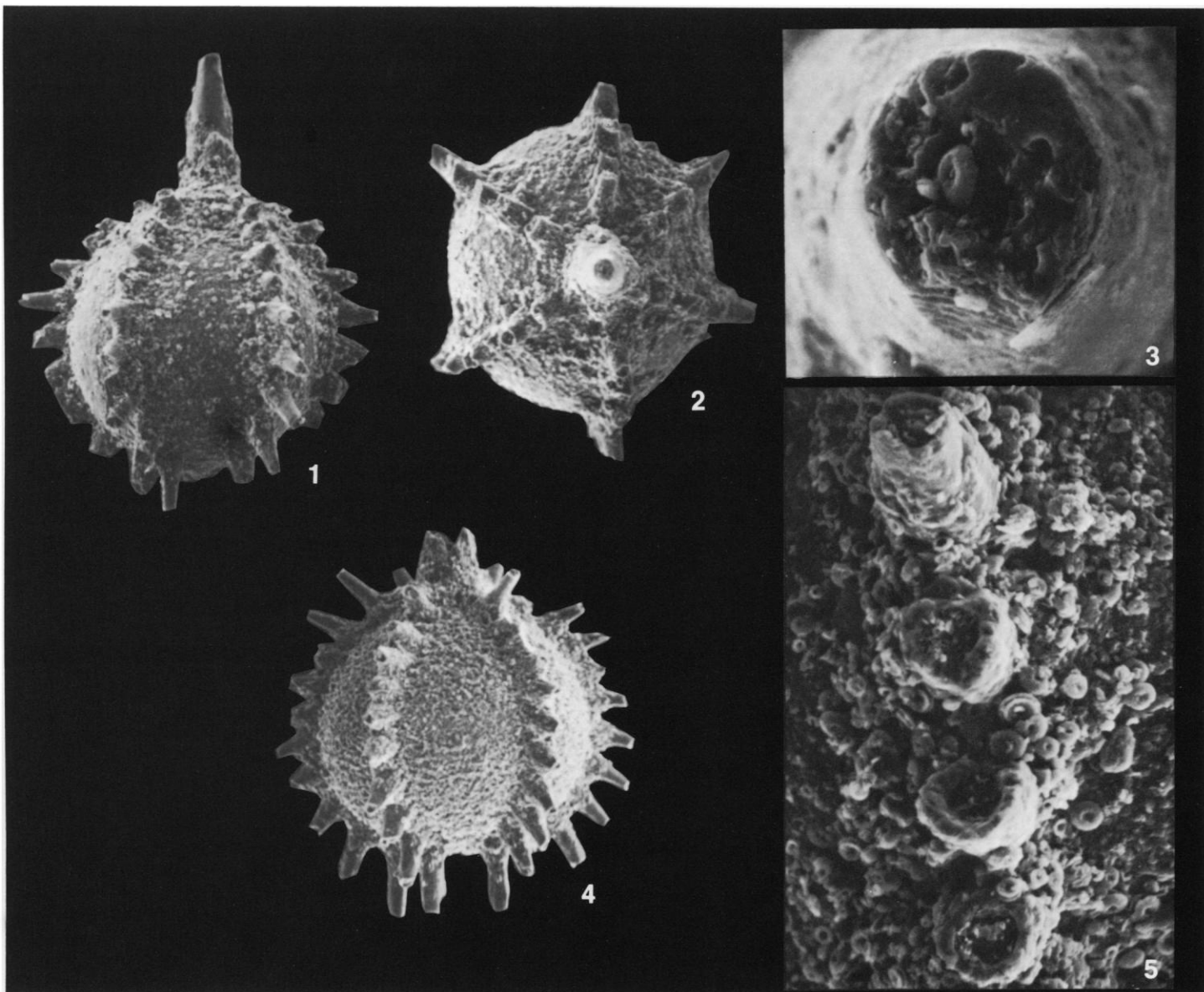


FIGURE 1—5, *Globulospinella porcupina* n. sp., 357-6-5, 72–88 cm, Miocene. 1, side view of holotype (USNM 408768) showing elongate neck,  $\times 120$ ; 2, apertural view showing circular section and six rows of longitudinal tubules,  $\times 150$ ; 3, enlargement of circular aperture,  $\times 1,600$ ; 4, side view of paratype (USNM 408769) showing rows of elongate tubules,  $\times 125$ ; 5, enlargement of hollow tubules,  $\times 1,000$ .

finely perforate; elongate, hollow or solid, processes on the outer test wall may be longitudinally aligned in rows, or randomly dispersed; aperture terminal, circular or radiate.

*Range.*—Paleocene to Recent (based on a literature search).

*Etymology.*—From the Latin, *globus*, ball, globulus, diminutive, bead; *spina*, thorn, *-ella*, diminutive, with reference to the characteristic processes of the genus.

*Remarks.*—*Globulospinella* differs from *Lagena* Walker and Jacob, 1798, which has a surface sculpture of longitudinal costae, and from *Pygmaeoseistron* Patterson and Richardson (1988), which is characterized by a smooth to hispid surface, in having a surface sculpture of elongate processes. *Cushmanina* R. W. Jones, 1984, differs from the present genus in having

punctae within longitudinal costae, and *Lagena* Popescu, 1983, differs by its compressed cross section.

#### GLOBULOSPINELLA PORCUPINA n. sp.

Figure 1

*Diagnosis.*—A subglobular species of *Globulospinella* with six longitudinal rows of projecting hollow tubules.

*Description.*—Test free, unilocular, subglobular; wall calcareous, translucent, smooth, finely perforate; six longitudinal rows of 9–12 evenly spaced, hollow, elongate processes extending from the bottom to the base of the narrow, elongate neck; aperture terminal, small, and round.

*Etymology.*—From the Latin, *porcus*, hog, and *spina*, thorn;

porcupine, with reference to the longitudinal rows of projecting tubular processes.

*Species dimensions.*—Maximum length, 600  $\mu\text{m}$ ; maximum width, 475  $\mu\text{m}$ .

*Material.*—Two specimens.

*Types and occurrence.*—Holotype (USNM 408768) and figured paratype (USNM 408769) from core 6, section 5, 72–88 cm, Miocene. Rare in a single Miocene sample.

*Remarks.*—*Globulospinella porcupina* is most similar to *Lagena crowley* Martin, 1943, differing in the fewer longitudinal rows of processes, and the lack of papillae on the neck in the present species. *Lagena clavulus* Heron-Allen and Earland, 1922, differs from the present species in having the entire surface of the test covered with bolt-like projections rather than these being arranged in six longitudinal rows, and *Lagena vikensis* Hessland, 1943, differs from *Globulospinella porcupina* in possessing a greater number of rows of processes, with randomly dispersed processes between.

Subfamily ELLIPSOLAGENINAE Silvestri, 1923

Genus PALLIOLATELLA Patterson and Richardson, 1987

PALLIOLATELLA AVITA Patterson and Richardson, 1987

*Palliولاتella avita* PATTERSON AND RICHARDSON, 1987, p. 219, Pl. 2, figs. 4–7, Pl. 5, figs. 3, 4.

*Remarks.*—The holotype of *Palliولاتella avita*, the type species of *Palliولاتella*, was lost enroute to the U.S. National Museum. A neotype (USNM 410834) is herein designated from amongst the unfigured paratypes (USNM 383354) from the Bergstrom Formation, Taylor Group, Cretaceous, on the right (east) bank of Onion Creek, at Moore and Berry's Crossing, just downstream from the iron bridge of Burleson Road, southeast of Austin, Travis County, Texas.

#### ACKNOWLEDGMENTS

This research was supported by a NSERC Postgraduate Scholarship. The Department of Earth and Space Sciences, University of California, Los Angeles, and Geological Society of America Research Grant 3640-86 provided funds for the purchase of Polaroid film. Samples from the Deep Sea Drilling Project were supplied through the assistance of the National Science Foundation. NSF Grant EAR-8306170 to A. R. Loeblich, Jr., and H. Tappan provided support and use of the scanning electron microscope. Acknowledgment is made to the Donors of the Petroleum Research Fund, administered by the American Chemical Society, for the partial support of this research under PRF 16479-4C2. I also would like to thank A. R. Loeblich, Jr., and H. Tappan, for critically reviewing the manuscript.

#### REFERENCES

- JONES, R. W. 1984. A revised classification of the unilocular Nodosariida and Bulimida (Foraminifera). *Revista Española de Micropaleontología*, 6:91–160.
- PATTERSON, R. T., AND R. H. RICHARDSON. 1987. A taxonomic revision of the unilocular foraminifera. *Journal of Foraminiferal Research*, 17:212–226.
- , AND —. 1988. Eight new genera of unilocular foraminifera. *American Microscopical Society Transactions*, 107 (in press).
- RUESS, A. E. 1862. Entwurf einer systematischen Zusammenstellung der Foraminiferen. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften in Wien, Mathematisch-Naturwissenschaftliche classe* (1861), 44:355–396.
- SILVESTRI, A. 1923. Lo stipite della Elissoforme e le sue affinità. *Memorie della Pontificia Accademia della Scienze, Nuovi Lincei*, ser. 2, 6: 231–270.

ACCEPTED 5 JANUARY 1988

## THE SILURIAN BRACHIOPOD *AUSTRALINA* FROM THE MALVINOKAFFRIC FAUNAL PROVINCE

PAUL COPPER,<sup>1</sup> MARIO HÜNICKEN,<sup>2</sup> AND J. LUIS BENEDETTO<sup>2</sup>

<sup>1</sup>Department of Geology, Laurentian University, Sudbury P3E 2C6, Canada and

<sup>2</sup>Departamento de Geología, Universidad de Córdoba, Córdoba, Argentina

**ABSTRACT**—The smooth-shelled, spire-bearing, brachiopod genus *Australina* Clarke, 1913 (family Lissatrypidae), is revised on the basis of topotypic material collected from the middle and upper parts of the Los Espejos Formation (Ludlow, Upper Silurian) in San José de Jachal, northwest Argentina. Serial sectioning of topotypic material from the type species of *Lissatrypa* and its junior synonyms, *Nanospira* and *Lissatrypoidea*, which have previously been compared to it, shows that these differ substantially from *Australina*. *Australina* appears, thus far, to be unknown outside South America, and outside Argentina; the genus appears to occur below the oldest *Clarkeia* rhynchonellid fauna in this section, which is interpreted as being of Pridolian age.

#### INTRODUCTION

THE GENUS *Australina*, established by Clarke in 1913, has been a thorny problem in evaluating the distribution and evolution of the smooth atrypoid brachiopods. Castellaro (1959) clearly established its spire-bearing affinities by finding traces of dorsally directed spiralia with 3–4 whorls, which has been corroborated with the discovery of similar material in old collections. The genus *Australina* was founded shortly before publication of the superficially similar *Lissatrypa* by Twenhofel in

1914, and some authors have tended to view the two as synonymous (e.g., as recently as Strusz 1982a, 1982b). Evidence is herein presented to demonstrate that there are substantial internal differences and a recognizably different external shell for *Lissatrypa* and *Australina*, supporting the contention of Havlicek (1984) that the genera are distinguishable, though for other reasons. Havlicek had no access to topotypic materials of *Australina*.

In 1949, Amsden founded the genus *Nanospira*, based on