

Taxonomic note – New Upper Cretaceous nannofossil taxa from the Turonian of New Mexico, USA

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1. Introduction

As part of a study on the nannofossils of the Western Interior Seaway (USA), we discovered assemblages that we interpreted as shallow-water (possibly hyposaline- and/or turbidity- and/or instability-tolerant) pioneers of the Turonian marine transgression, in a core from the San Juan Basin of New Mexico (Schueth & Lees, 2019). These assemblages—which had been remarked on previously by Howe in Sikora et al. (2004), although the new taxa were never described—were unusual in initially having low diversities and being dominated by holococcoliths, including new species. Alongside these were several new and seldom-reported heterococcolith taxa. Up-section, these assemblages gave way to the typically diverse, cosmopolitan, open-marine nannofloras of the Coniacian and Santonian.

Here, we provide the holotype images of our new taxa (that were described in Schueth & Lees, 2019), along with illustrations of the rarely-reported, potentially shallow-water taxa in the assemblages.

2. Taxonomic list

Ahmuellerella frankiae Lees, Schueth & Howe in Schueth & Lees, 2019

Bifidalithus geminicatillus Varol, 1991

Braarudosphaera bigelowii (Gran & Braarud, 1935) Deflandre, 1947

Calculites anfractus (Jakubowski, 1986) Varol & Jakubowski, 1989

Gartnerago waszczakii Lees, Schueth & Howe in Schueth & Lees, 2019

Orastrum colligatum Henderiks & Ziveri, 1997

Orastrum schollei Lees, Schueth & Howe in Schueth & Lees, 2019

Pharus clarescopoli Lees, Schueth & Howe in Schueth & Lees, 2019

Saepiovirgata biferula Varol, 1991

Tortolithus caistorensis Crux in Crux et al., 1982

Wisea Lees, Schueth & Howe in Schueth & Lees, 2019

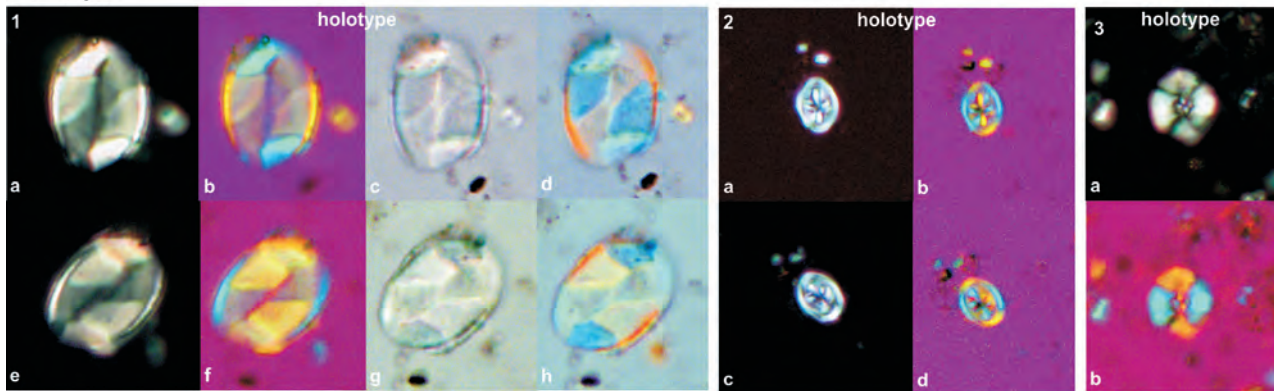
Wisea sanjuanensis Lees, Schueth & Howe in Schueth & Lees, 2019

References

- Schueth, J.D. & Lees, J.A. 2019. Pioneer nannofossil assemblages from the initial transgression of the Niobrara seaway in the Turonian, San Juan Basin, New Mexico, USA. *Marine Micropaleontology*, **151**. <https://doi.org/10.1016/j.marmicro.2019.101771>
- Sikora, P.J., Howe, R.W., Gale, A.S. & Stein, J.A. 2004. Chronostratigraphy of proposed Turonian–Coniacian (Upper Cretaceous) stage-boundary stratotypes: Salzgitter-Salder, Germany, and Wagon Mound, New Mexico, USA. In: A.B. Beaudoin & M.J. Head (Eds). *The Palynology and Micro-paleontology of Boundaries. Geological Society of London, Special Publications*, **230**: 207–242.

Plate 1

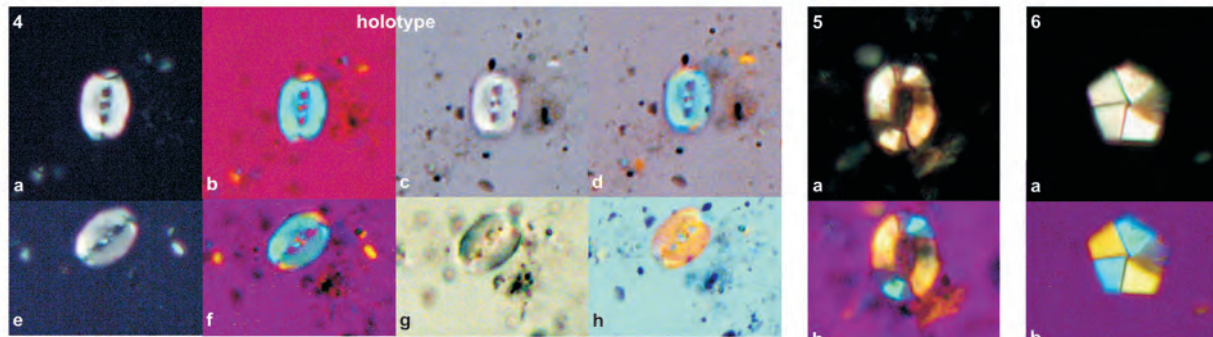
— 2 μ m



Gartnerago waszczakii
7250.2 ft/2209.86 m

Ahmuellerella frankiae
7260.15 ft/2212.89 m

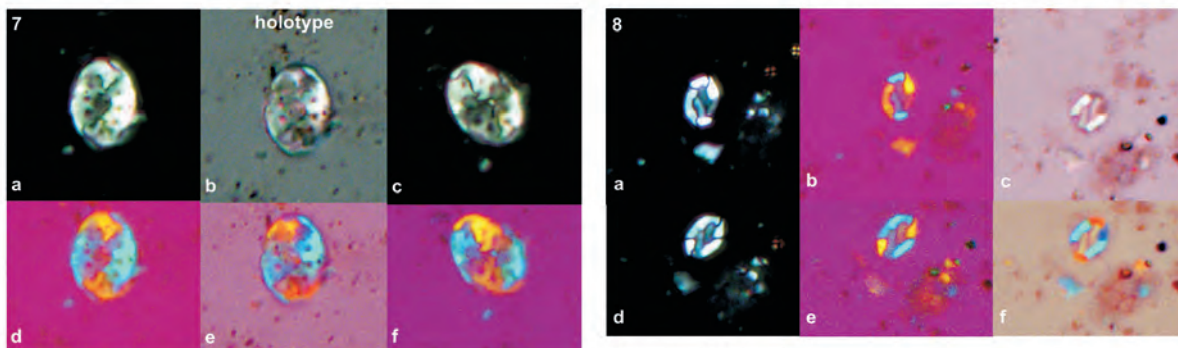
Wisea sanjuanensis
7260.15 ft/2212.89 m



Pharus clarescopoli
7237.8 ft/2206.08 m

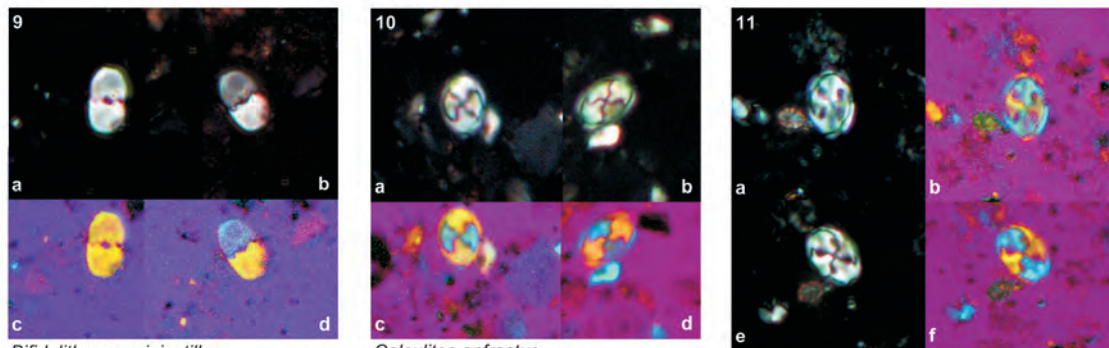
Tortolithus caistorensis
7203.95 ft/2195.76 m

Bra. bigelowii
7203.95 ft/2195.76 m



Orastrum schollei
7260.15 ft/2212.89 m

Saepiovirgata biferula
7250.2 ft/2209.86 m



Bifidalithus geminicatillus
7237.8 ft/2206.08 m

Calculites anfractus
7203.95 ft/2195.76 m

Orastrum colligatum
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