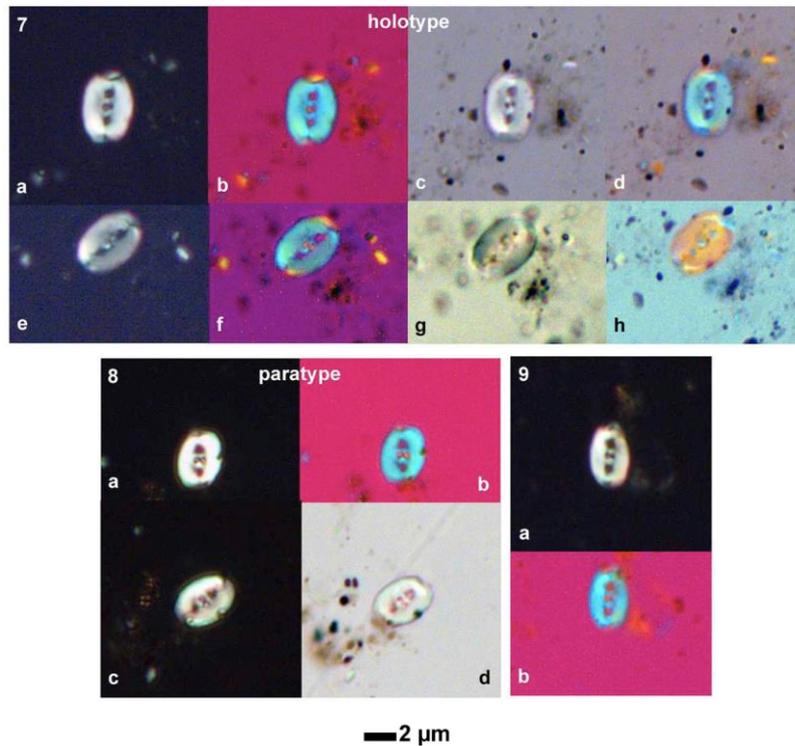


Pharus clarescopoli Lees, Schueth & Howe in Schueth & Lees (2019)



Pl. 2, figs 7–9

Pl. 2, figs 7–9. *Pharus clarescopoli* sp. nov. Lees, Schueth & Howe. Fig. 7, 7237.8' (2206.08m), Fig. 8, 7250.2' (2209.86m), Fig. 9, 7237.8' (2206.08m). Figs 7a, e, 8a, c, 9a XPL, 7b, f, 8b, 9b XPL + GP, 7c, g, 8d PL, 7d, h PL + GP

Pharus sp. A Howe in Sikora et al., 2004, fig. 18a–c

Derivation of name: From the Latin '*claresco*' meaning 'become bright/evident' and '*poli*' meaning 'ends of an axis', referring to the small crystallographic blocks at the ends of the ellipse of this holococcolith that become a different color to the main rim and more distinct upon use of a quartz plate.

Diagnosis: A species of *Pharus* with generally low birefringence and an indistinct longitudinal suture that bifurcates at the ends to enclose two small crystallographic blocks that are crystallographically distinct from the two blocks of the main part of the holococcolith, which are both arranged in the same crystallographic orientation. Two short short-axis bars, contiguous with the rim blocks, define three small perforations aligned along the longitudinal axis. The central of these perforations is smaller than the other two, and appears to be surmounted by four minute crystallites that might be a small, short spine (see Pl. 2, fig. 7e, f); the crystallographic orientation of the two short-axis crystallites in the potential spine give the appearance of a bright bow-tie between the

two bars, which is apparent even when these crystallites are not readily visible/potentially missing (see Pl. 2, fig. 8).

Differentiation: This new species has superficial similarities to *P. simulacrum*, including low-order gray birefringence, the main component plates lying in the same crystallographic orientation as each other, and the possession of two longitudinal perforations and a short spine. The differences, however, include the lack of a short-axis suture in *clarescopoli* and the presence of a longitudinal one, and the two crystallographically-distinct blocks at the ends of *clarescopoli*, which *simulacrum* lacks. The spine in *simulacrum* has a bulbous termination, while the one in *clarescopoli* appears to be cruciform.

Holotype: Pl. 2, fig. 7a–h.

Holotype dimensions: 4.8 µm long, 3.4 µm wide.

Paratype: Pl. 2, fig. 8a–d.

Type locality: Rio Arriba County, San Juan Basin, New Mexico, USA (36°16'27.8"N, 107°28'1"W).

Type level: San Juan 28-6 UT 148M core, 7237.8' (2206.08 m); UC9, Turonian.

Occurrence: San Juan 28-6 UT 148M core, Turonian–Coniacian (UC8–UC10).

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**.