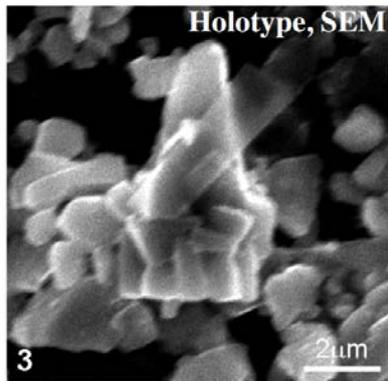
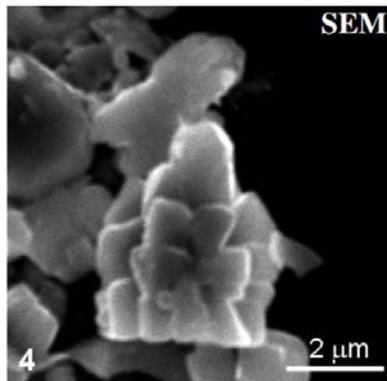


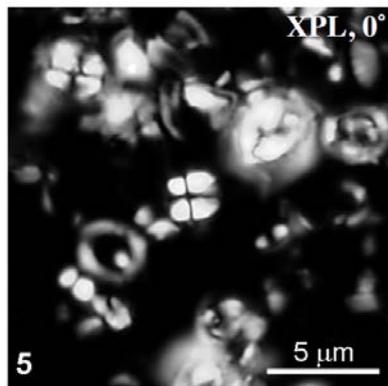
87. *Sphenolithus rioi* Agnini et al. (2008)



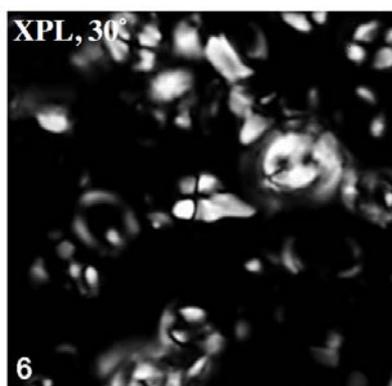
*Sphenolithus rioi* Side view, long-spined morphotype. Sample ODP 208-1262A-15H-4W, 44-45cm



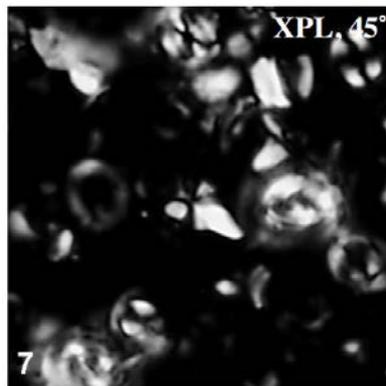
*S. rioi* Side view, short-spined morphotype. Sample ODP 208-1262A-16H-1W, 132-133cm



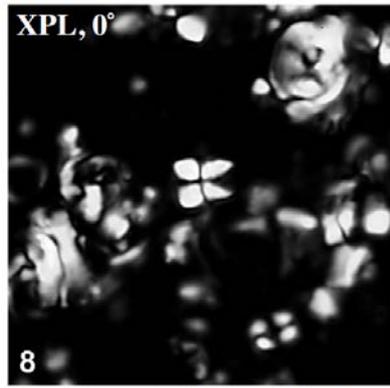
*S. rioi* Sample 1262A-15H-3W, 128-129cm



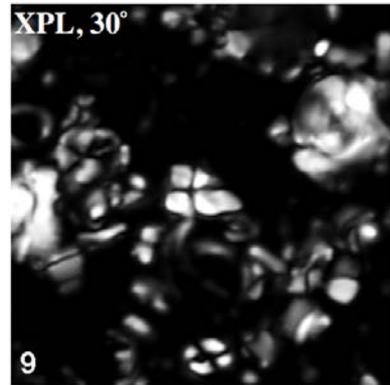
*S. rioi* Sample 1262A-15H-3W, 128-129cm



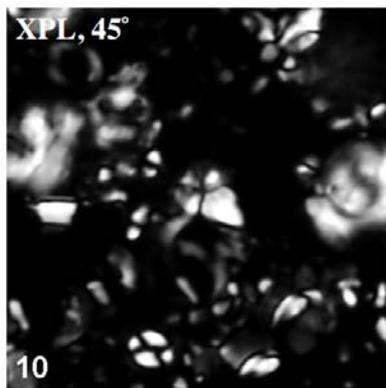
*S. rioi* Sample 1262A-15H-3W, 128-129cm



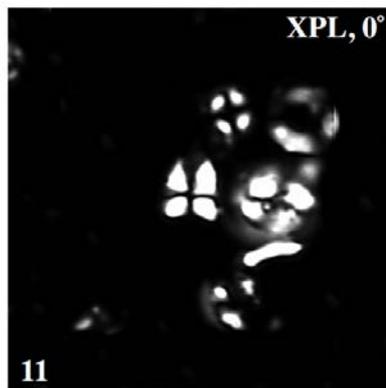
8  
*S. rioi* Sample 1262A-15H-3W,  
128-129cm



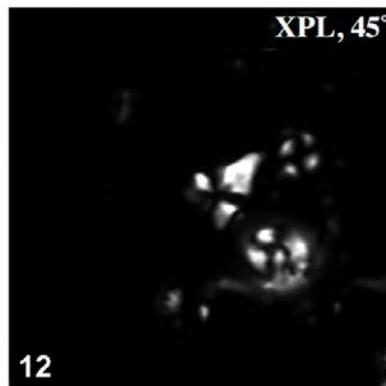
9  
*S. rioi* Sample 1262A-15H-3W,  
128-129cm



10  
*S. rioi* Sample 1262A-15H-3W,  
128-129cm



11  
*S. rioi* Sample 1209B-23H-4W, 1-2cm



12  
*S. rioi* Sample 1209B-23H-4W, 1-2cm

Pl. 2, figs 3-12

**Derivatio nominis:** In honor of our mentor, Domenico Rio, full professor at the Department of Geosciences, University of Padova (Italy), geologist and calcareous nannofossil palaeontologist.

**Diagnosis:** Medium-sized *Sphenolithus* with a prominent apical spine, extending symmetrically from the basal part.

**Description:** The basal part is constructed of regularly-placed calcite elements, and in

crossed-polarised light (XPL), with the long axis at 0° to the nicols, has a square-shaped outline with equal quadrants. A solid, prominent, straight apical spine extends symmetrically, with respect to the basal elements. In XPL, with the long axis at 0° to the nicols, the basal part shows birefringence, whereas the apical spine has its maximum birefringence at 20-30° and 45° to the nicols.

**Differentiation:** In the light microscope, *S. rioi* differs from *S. anarrhopus* (Pl.2, figs 13-16) in having a straight, and generally longer, apical spine. *S. rioi* differs from *S. conspicuus* Martini, 1976 in having a different apical spine: *S. rioi* has a triangular-shaped spine, whereas *S. conspicuus* is characterised by a slender, spearhead-shaped spine.

**Holotype:** Pl. 2, fig. 3.

**Size:** Height = 4.5-7µm (holotype = 6.7µm); width of base = 3.6µm; height of base = 2.1µm.

**Paratype:** Pl. 2, figs 5-7; Sample ODP 208-1262A-15H-3W, 128-129cm.

**Type locality:** Walvis Ridge, SE Atlantic Ocean, ODP Leg 208, Site 1262.

**Type level:** Zone CP6, Thanetian (Upper Palaeocene); Sample ODP 208-1262A-15H-4W, 44-45cm.

**Range:** CP4-CP7, Upper Selandian-Thanetian (Middle-Upper Palaeocene).

**Remarks:** In previous studies, *S. rioi* has been probably considered a morphotype of *S. anarrhopus*. The morphologic differences highlighted here are distinct enough to warrant taxonomic differentiation.

**Occurrence:** The FO of *Sphenolithus rioi* is recorded in the upper part of CP4 (Upper Selandian). The species is rare and scattered within CP5, whereas it is common and continuous in CP6 and CP7. The stratigraphic range of *S. rioi* is virtually the same as for *S. anarrhopus*, with the FO of *S. rioi* slightly predating the FO of *S. anarrhopus*.

Agnini, C., Fornaciari, E. & Raffi, I., 2008. Three new species of calcareous nannofossil from Late Palaeocene and Early Eocene assemblages (Ocean Drilling Program Site 1262, Walvis Ridge, SE Atlantic Ocean). *Journal of Nannoplankton Research*, **30 (1)**: 51-56.