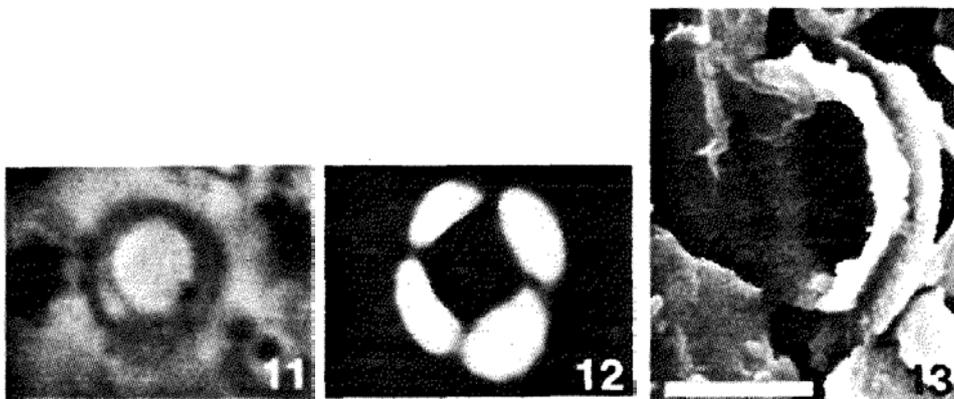
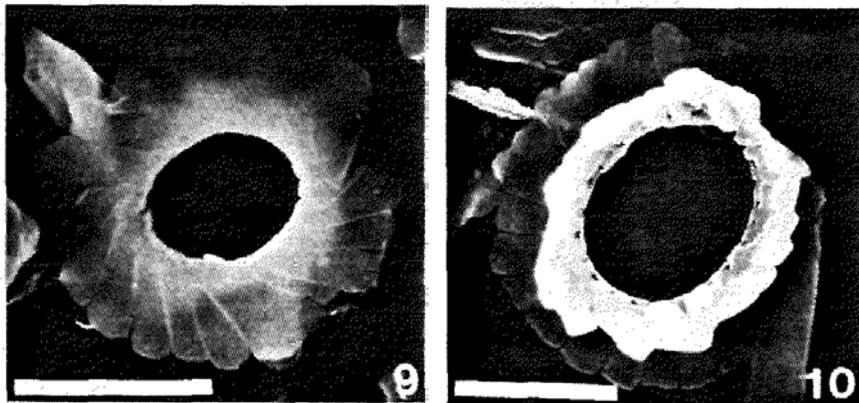
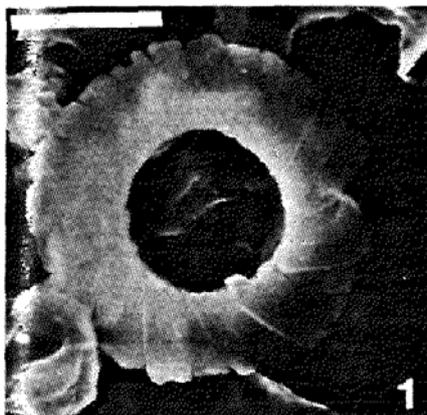


9. *Ansulasphaera bownii* Rahman & Roth (1991)



SCALE BARS=2 $\mu$ m

Pl. 1, figs 9-13



SCALE BARS=2 $\mu$ m

Pl. 2, fig. 1



SCALE BARS=2 $\mu$ m

Pl. 4, fig. 4

**Diagnosis:** A circular to broadly elliptical *Anulosphaera* with a relatively large central opening and a relatively high proximal shield in which the elements are sloping toward the inner part of the coccolith.

**Description:** The rim of *A. bownii* consists of two unequal shields of circular to broadly elliptical shape with a central opening ranging in diameter from one-third to one-half the diameter of the coccolith. The distal shield has a crenulated outer margin, and is composed of a wide cycle of 24 to 28 elongated elements, inclined sinistrally (in distal view). The elements of the distal shield have straight sutures in most of the outer part of the shield (Pl. 1, Fig. 9). The proximal shield is smaller than the distal shield, and is composed of a single cycle of elements, equal in number to the distal shield. The sutures of the proximal shield are sinistrally inclined (Pl. 1, Fig. 10), and the elements slope steeply toward the central area in proximal view (Pl. 1, Fig. 13; Pl. 4, Fig. 4). The outer margin of the proximal shield appears irregular.

**Remarks:** In axial view, *A. bownii* shows a high relief under phase contrast illumination. Between crossed nicols, the rim is birefringent with four extinction bands, each at 10 to 15° angle to the vibration plane of the polarizer or analyzer. The morphological characteristics of *A. bownii* is in between *A. helvetica* and *Watznaueria barnesae*. The generic assignment of *A. bownii*, however, is based on the high proximal shield, which is not found in *Watznaueria*.

**Differential diagnosis:** *A. bownii* differs from *A. helvetica* by a shorter proximal shield which does not form a tube, and by having a smaller number of cycles in the distal shield. Beside the inner cycle, there are two cycles in the distal shield of *A. helvetica*. In case of *A. bownii*, the distal shield is composed of a single cycle with some indications of the presence of a narrow cycle at the innermost part (Pl. 1, Fig. 9).

**Derivation of name:** This species is named after Dr. Paul R. Bown of the University College London, for his contribution to Jurassic nannofossil taxonomy.

**Holotype:** USNM 458827 [Pl. 1, Fig. 9, Sample 534A-102-3, 76-77 cm (USNM 458826)].

**Paratypes:** USNM 458828 [Pl. 1, Fig. 10, Sample 534A-102-3, 76-77 cm (USNM 458826)]; USNM 458829 [Pl. 1, Fig. 13, Sample 534A-100-3, 6-7 cm (USNM 458830)]; USNM 458831 [Pl. 2, Fig. 1, Sample 534A-102-3, 76-77 cm (USNM 458826)].

**Dimensions:** Rim is 3.3 to 5.25  $\mu\text{m}$  long and 3.0 to 5.0  $\mu\text{m}$  wide, and the central area is 1.2 to 2.4  $\mu\text{m}$  wide and 1.2 to 2.6  $\mu\text{m}$  long. The holotype is subcircular with a rim 3.4  $\mu\text{m}$  long and 3.0  $\mu\text{m}$  wide, and a central opening 1.5  $\mu\text{m}$  long and 1.2  $\mu\text{m}$  wide.

**Type level:** Sample 534A-102-3, 76-77 cm, upper Kimmeridgian.

**Geologic range:** *A. bownii* first occurs in Sample 534A-114-1, 49-50 cm, and was last observed in Sample 534A-99-4, 12-13 cm. The observed geologic range is early Oxfordian to early Tithonian.

Rahman, A. & Roth, P.H., 1991. Upper Jurassic calcareous nannofossils from the DSDP Site 534 in the Blake Bahama Basin, western North Atlantic. *Eclogae Geologicae Helvetiae*, **84(3)**: 765-789.