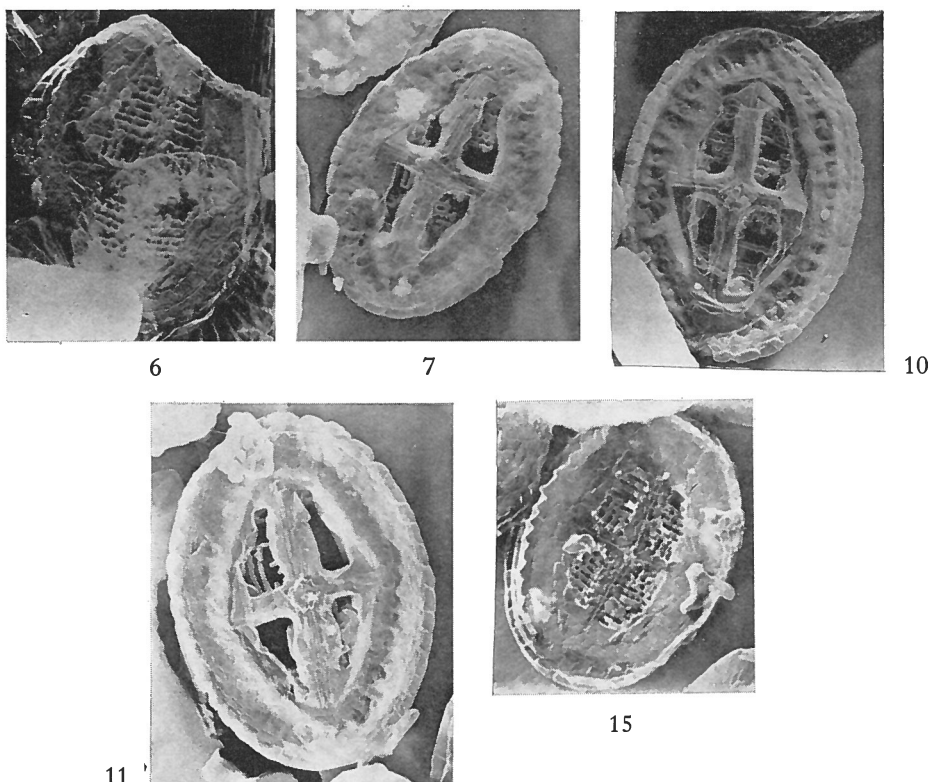


Acaenolithus cenomanicus BLACK, 1973



Figs. 6, 7, 10, 11, 15 — *Acaenolithus cenomanicus* sp. nov., x 5,200. 6) Proximal view. Cambridge Greensand, Cherry Hinton, Cambridge (H.847). SM 21719. 7) Distal view. Chloritic Marl, Folkestone (H.1284). SM 29981. 10) Holotype, distal view. Cambridge Greensand, Cherry Hinton, Cambridge (H.847). SM 21725. 11) Distal view. Cambridge Greensand, Hockwold (H. 961). SM 25651. 15) Proximal view. Cambridge Greensand, Barrington (H. 610). SM 14713.

Description:

Diagnosis: A species of *Acaenolithus* with two sets of slender grid-bars parallel to the arms of the central cross and forming a rectangular mesh.

Description: The coccolith is elliptical in outline. On the distal surface there is a narrow outer ring, about 0.3μ wide, consisting of between 36 and 40 quadrate elements. Concentric with this is a broader inner zone of larger and less regularly shaped crystals; the outer part of this zone is usually conspicuously fluted, but the part adjacent to the central opening is smooth. The central opening is equal to about $\frac{1}{2}$ the minor diameter of the coccolith, and is spanned by a robust cross along the principal diameters of the ellipse. The arms of the cross are made up of elongated rectangular crystals, giving the surface a boldly striated appearance. At the centre is a short spine composed of rhombohedral crystals. The proximal grid is visible through the four windows which are framed by the arms of the cross.

The proximal surface shows a complicated pattern resulting from the intricate suturing of its

component crystals. The proximal surface of the cross is not striated, being made of less elongated crystals than the distal surface. Extending across each window is a complex grid consisting of two sets of narrow bars or rods arranged more or less at right angles to the arms of the cross. Where the two sets of bars meet, they are in many cases fused together to make a crude rectangular mesh.

Measurements (in microns):

				d	d'	c	c'	n
Holotype:	H.847	21725	distal view	8.4	6.1	5.8	3.4	40
	H.610	14713	proximal »	7.6	5.6	5.0	2.3	40
	H.847	21719	» »	9.6	6.6	6.0	3.0	—
	»	21728	» »	6.3	4.4	4.2	2.0	—
	»	21755	» »	6.2	4.9	4.2	2.1	—
	H.941	25713	distal »	7.9	6.0	4.5	2.9	38
	H.961	25651	» »	9.0	6.6	6.0	3.8	40
	H.1284	29981	» »	7.8	5.2	5.7	3.1	40
	»	30010	proximal »	7.0	5.0	3.8	2.0	36

d, d' = major and minor diameters respectively of the distal shield or distal surface.

c, c' = major and minor diameters of the central area.

n = number of component elements in the distal shield, loxolith-ring or other marginal structure.

Remarks:

This species differs from *A. vimineus* sp. nov. in its slenderer and much more numerous grid-bars, and their fusion to form a mesh. In some respects it resembles *Broinsonia dentata* BUKRY, 1969, but differs in the presence of a spine, in the bold striation of the distal side of the cross, and in the more delicate and more numerous grid-bars which, when undamaged, completely cross the window in *A. cenomanicus*, but not in *B. dentata*.

Type level:

Cambridge Greensand. Lower Cenomanian.

Occurrence: Lower Cenomanian. Widespread and frequent in the Cambridge Greensand and Chloritic Marl, at Barrington (H.610), Cherry Hinton (H.847), Hauxton (H.848), Mildenhall (H.941), Hockwold (H.961) and Folkestone (H.1284).

Type locality:

Cambridge Greensand of Cherry Hinton Fields near Cambridge (Southeastern England).

Depository:

Collection of electron micrographs at the Sedgwick Museum, Cambridge.

Holotype: SM 21725; fig. 10; from the Cambridge Greensand (Lower Cenomanian) of Cherry Hinton Fields near Cambridge (H.847).

Author:

Black M., 1973, p. 57; pl. 21, figs. 6, 7, 10, 11, 15.

Reference:

British Lower Cretaceous Coccoliths. I. Gault Clay. Palaeontogr. Soc. Monogr.: (2), pp. 49-112, pls. 17-33, text-figs. 39-51.