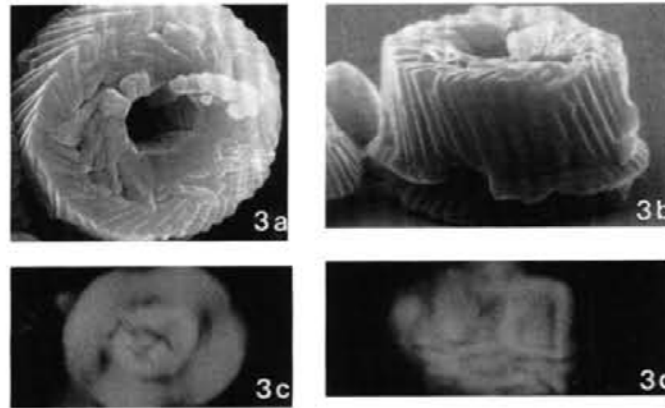


4. *Amithalithina sigmundii* Pospichal & Wise (1990)



Pl. 5, fig. 3

Plate 5, fig. 3. *Amithalithina sigmundii*, n. gen., n. sp., (a) Sample 113-690B-15H-1, 30-32 cm, SEM, X4500; (b) SEM, X4500, side view of specimen (a); (c) Sample 113-690B-15H-3, 30-32 cm, Pol, X3300; (d) Pol, X3300, side view.

Diagnosis: Medium to small subround to elliptical species of *Amithalithina* composed of two shields surmounted by a massive, flat topped central column composed of two cycles of elements about a hollow center.

Description: The proximal and distal shield as well as the central column are composed of about 60-70 dextrally imbricate elements. The distal shield is similar in width or only slightly wider than the proximal shield, and supports a cylindrical central column which is only slightly narrower than the shields. The outer cycle of the central column is composed of dextrally imbricate lath-shaped elements inclined from the vertical at about a 65°-70° angle. There are fewer elements in the inner cycle, which surrounds a hollow central area that spans about 30% of the width of the coccolith on the distal side, but may be closed on the proximal side. The height of the coccolith is about 3x the width, and in lateral view (Pl. 5, Fig. 3b), it resembles a pound cake sitting on a plate.

In the light microscope, the coccolith displays a very high order of birefringence in cross polarized and phase contrast light. In cross polarized light the inner cycle of elements form a bright circle surrounding a small central area which may be opened slightly or closed at the base of the coccolith. An X-shaped pattern is formed by very thin extinction lines within the central area, which is more obvious in closed specimens. The bright outer cycle displays an undulating extinction pattern in cross polarized light. In lateral view (Pl. 5, Fig. 3d) it superficially resembles some Paleocene helioliths.

Remarks: The species is named after the distinguished amateur geologist, Emil Sigmund, whose introduction to the wonders and beauty of the Rocky Mountains provided the inspiration for the first author to pursue a career in this exciting field.

Size: 5-7 μm wide; 3.5-4.0 μm high.

Distribution: Few to common in the early to middle Eocene Zones CP10-CP13 in sediments of Maud Rise, Weddell Sea, Antarctica.

Holotype: Plate 5, Figure 3a, b.

Isotype: Plate 5, Figure 3c, d.

Type locality: Ocean Drilling Program Sample 113-690B-15H-1, 30-32 cm.

Pospichal, J.J. & Wise, S.W., Jr., 1990. Paleocene to Middle Eocene calcareous nannofossils of ODP sites 689 and 690, Maud Rise, Weddell Sea. *Proceedings of the Ocean Drilling Program, Scientific Results*, **113**: 613-638.