

3. *Amitha Shafik* (1989)

Name: *Amitha* (Greek), a kind of cake.

Type species: *Amitha perfecta* gen. et sp. nov.

Diagnosis: Cyrtolith with a three-cycle basal shield (S1, S2 & S3 in Fig. 2) and a compound hollow central structure (CC, CW & CT in Fig. 2), projecting distally. The outline of the basal shield varies from broadly elliptical to nearly circular, seemingly inconsistent with the almost circular central structure. The outline of the central structure consists of at least one tier (CC), and a dome-shaped cupola's top (CT). Elements of the main part of the cupola are spirally arranged in a whirl-pattern.

Remarks: The three cycles of the basal shield of *Amitha* resemble the three (main) cycles of the circular basal shield characteristic of *Blackites* Hay & Towe emended Stradner (in Stradner & Edwards, 1968). These are best observed in a slightly oblique distal view. However, the intermediate cycle (S2) may be too narrow to be differentiated easily in some forms. The tiers of the central structure are best observed in an oblique (side) view. The (CC) tier between the basal shield and the remainder of the central structure recalls the central (connecting) tube of a placolith. The cupola is perforated, and in the presently known two species, there is a distinct zone (CT2) of narrow slits, at the margin of the cupola. The cupola may end in a nipple-like structure.

Differentiation: The compound central structure of *Amitha* (CC + CW + CT) differentiates it from *Blackites* and *Ommatolithus* gen. nov. *Blackites* possesses a large tubular shaft (~CT) with two tiers at its base (~CC + CW). *Ommatolithus* has a simple central structure (undifferentiated cupola = CT) which lacks tiers. *Amitha* differs from *Notiocyrtolithus* gen. nov. in lacking a narrow distinct distal cycle of angular elements surrounding its cupola. This cycle, however, can be mimicked in *Amitha* by the addition of secondary calcite (diagenesis). *Notiocyrtolithus* has only two cycles in its basal shield (S1 & S3), and the eccentricity of its shield and central structure is similar. The central structure of *Amitha* resembles that of *Naninfula* Perch-Nielsen, but the basal shields of these genera differ. Perch-Nielsen (1971a) emended the description of *Naninfula* to indicate that its base is composed of a single disc; originally, it was thought that *Naninfula* possesses a two-shield base. This study showed that the distal and proximal sides of the basal shield of *Naninfula* are constructed differently. The distal side is constructed of a single broad cycle, whereas the proximal side has two other cycles (see Fig. 2). The broad cycle of the distal side (S1) appears on the proximal side as a narrow (third) cycle enclosing two other cycles (S2 & S3).

Shafik, S. 1989. Some new calcareous nannofossils from Upper Eocene and Lower Oligocene sediments in the Otway Basin, southeastern Australia. *Alcheringa*, **13(1)**: 69-83.