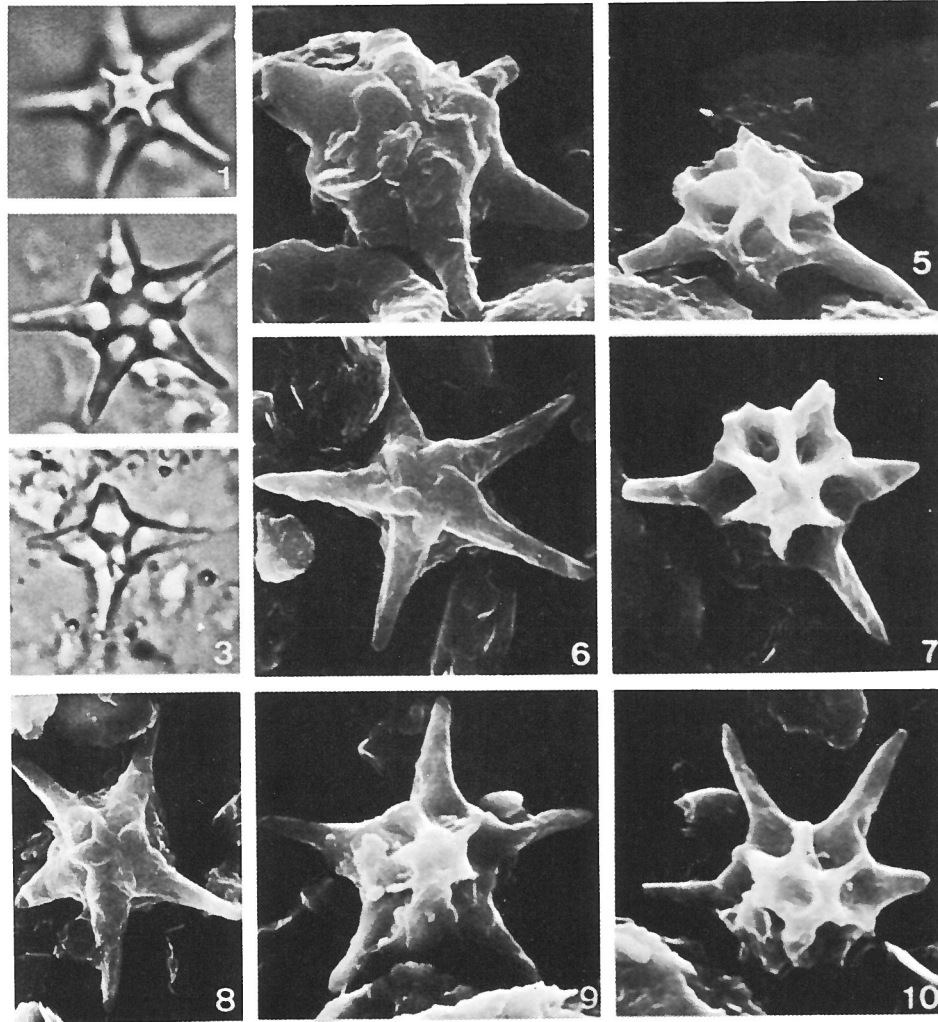


Discoaster mahmoudii PERCH- NIELSEN, 1981



Figs. 1-10 - *Discoaster mahmoudii* n. sp.
Distal view (Fig. 1-3,5,7,9,10) and proximal views (Fig. 4,6,8). Holotype: Figs. 5,7 (turned specimen). 640/36; $\times 2000$ (Fig. 1-3), $\times 5000$ (Fig. 4), $\times 3000$ (Fig. 5-7), $\times 2500$ (Fig. 8) and $\times 3500$ (Fig. 9, 10).

Description:

Diagnosis: Asterolith with long arms, a prominent knob with a central depression on the proximal side and a flat, smaller starshaped knob on the distal side.

Description: *Discoaster mahmouddi* usually has five rays. In sample 640/36, from which the holotype is described, a count of 50 specimens of the new species furnished 6% 4-rayed, 68% 5-rayed and 2% 7-rayed specimens. No counts were made in the other samples where the species was found since it is too sparse there. The rays are pointed at the end and usually straight. A slightly curved appearance seems to be due to dissolution and/or overgrowth rather than a primarily curved shape.

The proximal knob is high and shows a central depression. From the knob a more or less radially oriented leads to the area inbetween two rays. Between these ridges, quite deep depressions separate the central area from the base of the ray. Six-rayed specimens like the holotype thus have some similarities to the Middle Miocene species of *Catinaster*. The flatter structure on the distal side consist of the tangentially oriented extension of the rays towards the center. Distal views of fiverayed specimens thus resemble the Lower Eocene *Micrantholithus mirabilis* which, however, always has 5 rays and is much larger.

Remarks:

Discoaster mahmoudii is considered to belong to *Discoaster* only due to the lack of a more appropriate genus. It does not fit easily into any of the previously suggested evolutionary lineages of asteroliths (i.e. Prins 1971; Romein 1979). Such long, detached arms only occur later in time in the previously known asteroliths, in forms like *Discoaster lodoensis* and young (Eocene) forms of *D. binodosus*. *Discoaster falcatus* has shorter detached rays which are curved towards the center. *D. araneus* also has quite long rays (7-10), but they are arranged irregularly and the central structures seem less elaborate than in *D. mahmoudii*.

Type level:

Late Paleocene; *Discoaster multiradiatus* Zone, NP9.

Occurrence: *Discoaster mahmoudii* was found in several samples from the Taramsa section in the Nile Valley, Egypt. Romein (personal communication 1980) has observed it in the Upper Paleocene of the Caravaca section (Spain).

Type locality:

Gebel Taramsa. Nile Valley. Egypt.

Depository:

ETH SEM Archive, Honggerberg, Zurich.

Holotype: Negatives 6-3329/11 and 12, figs. 5, 7.

Author:

Perch-Nielsen K., 1981, p. 836; pl. 4, figs. 1-10.

Reference:

New Maastrichtian and Paleocene calcareous nannofossils from Africa, Denmark, the USA and the Atlantic, and some Paleocene lineages. *Eclogae geol. Helv.*, vol. 74/3, pp. 831-863, 7 pls., 14 text-figs.