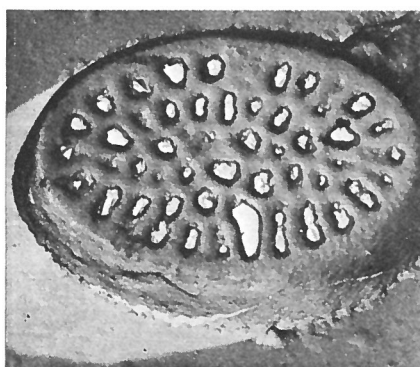


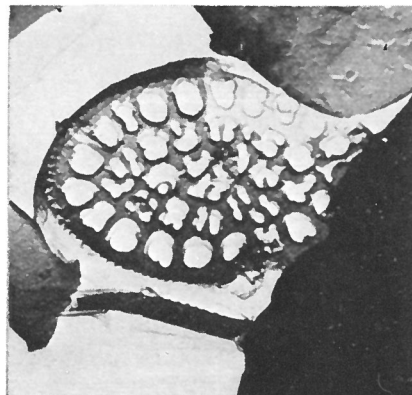
*Pontosphaera
multipora*

Pontosphaera multipora KAMPTNER, 1948 emend. BURNS, 1973

- 1948 *Discolithus multiporus* n. sp., Kamptner, 5, pl. 1, fig. 9. SitzBer. Osterr. Akad. Wiss. Math.-Naturw. Kl., Abt. 1, vol. 157.
1968 *Discolithus multipora* (KAMPTNER), Martini in Stradner & Edwards (part), 35, pl. 33, figs. 1-3; pl. 34, figs. 1,2. Jb. Geol. B. A., vol. 13.
1970 *Pontosphaera multipora* (KAMPTNER), Roth, 860, Ecl. geol. Helv., vol. 63, n. 3.



7



11

Figs. 7, 11 - *Pontosphaera multipora* KAMPTNER, 1948 emend.
7) proximal surface, $\times 7600$; 11) proximal surface, $\times 7600$.

Description:

Diagnosis: Elliptical concave-convex cribriliths with a central area possessing only two concentric rings of perforations.

Description: The cribriliths are elliptical in outline, possessing the lamellar flange typical of the genus (Pl. 1, figs. 7, 9), and a two-layered central area construction, which has a finely crenulated rim and narrow unperforated marginal band. Inside this marginal band is a peripheral ring of between 20-26 perforations (Pl. 1, fig. 7, 8). These may be circular (Pl. 1, fig. 7 part), rectangular (Pl. 1, fig. 7 part) or irregular (Pl. 1, fig. 9) in proximal surface contour, and vary considerably in dimensions. Inside this peripheral ring of perforations is a second clearly recognisable ring of perforations (Pl. 1, figs. 7, 8). Within the area enclosed by this second ring of perforations are a variable number of perforations, always arranged randomly. A tortuous suture line traverses the entire major axis of the ellipse.

Remarks:

This species can be distinguished from the similar species *Pontosphaera distincta* as the latter species never possesses an organised second inner ring of perforations but has a random or sporadic orientation of perforations inside the outer ring.

This species was originally described by Kamptner as possessing 40 perforations arranged in three rings. However, the diagram which accompanied this description clearly showed

that this form possessed only two definite rings, the other perforations being more randomly arranged within the inner ring. This form is therefore separated as *Pontosphaera multipora*, in order to clearly differentiate it from the similar but threeringed form *Pontosphaera discopora* SCHILLER, emended. Present specimens show a structure very similar to the form originally described by Kamptner and possess an approximate total of 40 perforations. In *P. mutipora* there is a great range of perforation sizes and shapes, which arise by erosion or other alteration of the initial perforations. Pl. 1, figs. 7, 8 show the species in a relatively good preservation with the pores at the surface fairly small, and regular; Pl. 1, fig. 9 shows another good preservation, but with the pores irregular and enlarged; Pl. 1, fig. 10 shows the enlargement process taking place, with the smaller more regular circular perforations at one end of the coccolith being transformed at the other end into larger and more irregular shapes. Further similar perforation alterations are illustrated in Pl. 1, fig. 11 until the ultimate erosional perforation enlargement is reached in Pl. 1, fig. 12 and Pl. 2, fig. 1. Through all these stages the two original perforation rings can be recognised despite the distortion of the coccoliths features. The final stage shown in Pl. 1, fig. 12 corresponds to the morphology described for *Discolithus rorsus* KAMPTNER, 1967. It is however, clear from these present micrographs that this is not a new or separate species but a modified form of *Pontosphaera multipora* emended. Stradner and Edwards (1968: 35) from observations of poorly preserved fossil material from the New Zealand Oamaru diatomite (Upper Eocene) produced a detailed and exhaustive list of species which they considered to be synonyms of this species (described under the name of *Discolithina multipora*). This list contained such varied forms as *Discolithus distinctus*, BRAMLETTE & SULLIVAN, 1961 but no indication or illustration was given of the various forms observed which led them to this synonymy. From the specific parameters described for their specimens, the excellent digrammatic illustrations of the species (showing the *Pontosphaera*-like two-layered structure of this coccolith) and the micrograph illustrations, it is apparent that the coccolith which they described should more accurately be attributed to the genus *Pontosphaera* as suggested by Roth (1970: 859). It is equally clear however, that the poor preservation of the specimens that they studied has led to the erroneous aggregation of *Pontosphaera distincta* n. comb. with this present species, this possibly being brought about by the analysis of the coccoliths with altered perforations and specimens whose surface layer of the central area had been eroded off. In this way, the present study has re-separated the species *Discolithus distinctus* and placed it in *Pontosphaera*.

Type level:

Miocene.

Type locality:

South West Pacific Ocean.

Depository:

New Zealand Oceanographic Institute.

Author:

Burns D.A., 1973, p. 151; pl. 1, figs. 7-12; pl. 2, fig. 1.

Reference:

Structural Analysis of Flanged Coccoliths in Sediments from the South West Pacific Ocean. Revista Española de Micropaleontología, vol. 5, no. 1, pp. 147-160, 2 pls., 1 text-fig.