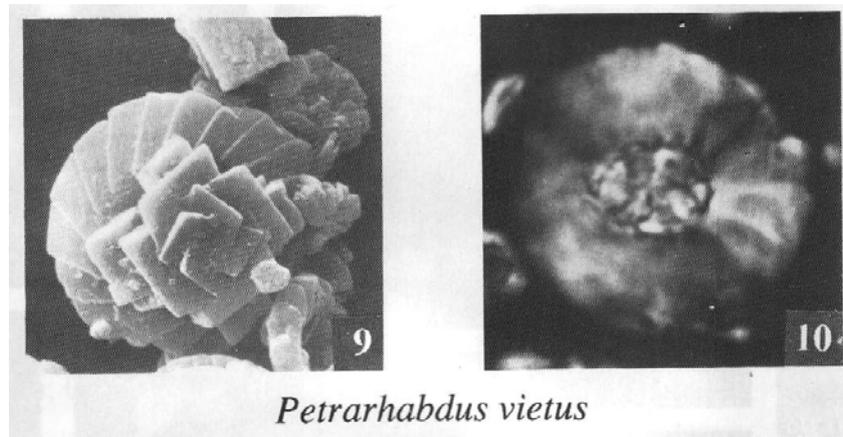


182. *Petrarhabdus vietus* Burnett (1997)



Pl. 2, figs 9-10

**Derivation of name:** Latin *vietus* =shrunken, referring to the nature of the spine relative to the coccolith.

**Diagnosis:** A species of *Petrarhabdus* in which the spine is remarkably smaller than the coccolith. In the LM, the image is very highly birefringent. It has >17 rim elements and a small central area which contains a complex cross composed of multiple laths. In the SEM, the spine appears to be composed of three stacks of calcite blocks, as opposed to the two stacks observed in *P. copulatus*. In *P. copulatus*, the rim elements do not imbricate as much as in *P. vietus*.

**Remarks:** The structure of *Petrarhabdus* has been remarked on previously by, for example, Wind (1975; who illustrated a number of 'varied morphologies'), Wind & Wise (*in* Wise, 1983) and Bralower & Siesser (1992; who illustrated the distal view without the spine), but its origins have remained obscure. However, a form of *Prediscosphaera* (*P. cf. P. majungae*: Plate 2, Figures 5, 6) has been found which suggests a link between *Prediscosphaera* and *Petrarhabdus*. Both genera have placolith rims, the two shields composed of the same crystal unit. The shields typically fuse with overgrowth in *Prediscosphaera*, and this can also be seen in *Petrarhabdus* (compare Plate 2, Figures 2 and 3 with Figure 6). Peg-like R-units can be seen, inserted between the rim elements in proximal views of *Prediscosphaera* (just visible on Plate 2, Figure 6), and these are also present in *Petrarhabdus* (Plate 2, Figure 8). A distinctive difference between the rims of the two genera is that *Prediscosphaera* typically has 16 elements in the rim, whilst *Petrarhabdus* has 17 or more. The *Petrarhabdus* spine is extremely distinctive, being angular and rosette-like. The *Prediscosphaera* specimen illustrated here has a bulbous tier of elements adjoining the coccolith, with a second, smaller tier lying above (and possibly inserted between) these. This specimen is possibly overgrown, but it is possible

to envisage that this arrangement might well have evolved into the *Petrarhabdus* spine construction. Thus, *Petrarhabdus* may have evolved from *Prediscosphaera*.

**Holotype:** Plate 2, Figure 10 (XPL); Neg.# UCL-5599-9.

**Holotype dimensions:** 14.4µm diameter.

**Type location:** DSDP Site 217, Bay of Bengal, N Indian Ocean.

**Type level:** Sample DSDP 217-23-2, 67-68cm, Lower/Upper Maastrichtian, CC24/25a.

**Range:** Upper Campanian-Upper Maastrichtian.

Burnett, J.A., 1997. New species and new combinations of Cretaceous nannofossils, and a note on the origin of *Petrarhabdus* (Deflandre) Wind & Wise. *Journal of Nannoplankton Research*, **19(2)**: 133-146.