

UNCOATED, LOW-VOLTAGE SEM ANALYSIS OF BOTH PROXIMAL AND DISTAL VIEWS OF THE SAME COCCOLITHS

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Abstract: Proximal and distal views of the same coccoliths are figured. High-resolution images of both sides of a coccolith can be achieved by subjecting uncoated specimens to a low-acceleration voltage with a reduced emission current of between 6 and 12 μA . A highly-polished carbon stub provided with a TEM "locator grid" is used in order to decrease charging and to ensure accurate relocation of the specimens.

Introduction

Mai (1988) described a new method for examining both sides of a single coccolith in the scanning electron microscope. This method has not been widely noted and so as a contribution to the current interest in methods (van Heck 1994) we give a brief summary with some improvements of the technique here and provide new examples of the results.

Method

Flood a few drops of cleaned (i.e. centrifuged) coccoliths in suspension over a highly-polished carbon stub and allow to dry at about 50°C . Place a TEM "locator grid" on the stub. If necessary, affix the grid with quick-drying silver paint.

In order to observe the specimens, set the SEM at

between 3 and 6 kV acceleration voltage and 6-12 μA emission current. The working distance should be 8 mm or less.

When photographing the coccoliths, make a note of their index positions on the grid, so that they can be relocated. To observe the obverse sides, place a double-sided adhesive carbon tab over the grid. Take care to apply only a little pressure. Remove the tab from the stub. The "locator grid" and the coccoliths will adhere to the tab. Mount the tab on a normal aluminum SEM stub and observe as detailed above.

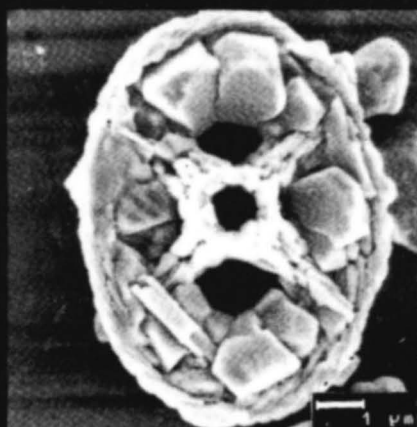
Reference

- Mai, H., 1988: A new method for SEM analysis of both proximal and distal sides of the same coccolith. - *J. Paleont.*, 62(1), pp. 151-152.

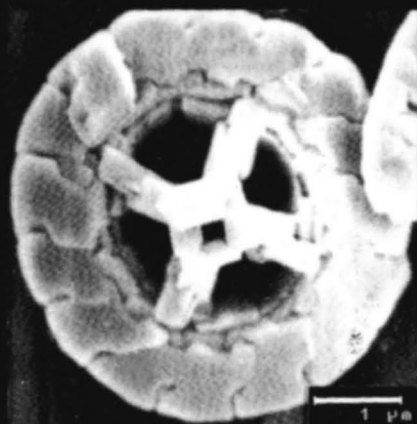
PLATE 1

- 1: *Eiffellithus turriseiffelli* (Deflandre, in Deflandre & Fert) Reinhardt 1965
- 2: *Prediscosphaera cretacea* (Arkhangelsky) Gartner 1968
- 3: *Prediscosphaera spinosa* (Bramlette & Martini) Gartner 1968
- 4: *Staurolithites compactus* (Bukry) Thierstein 1971

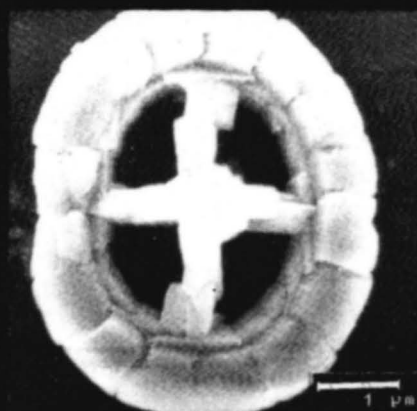
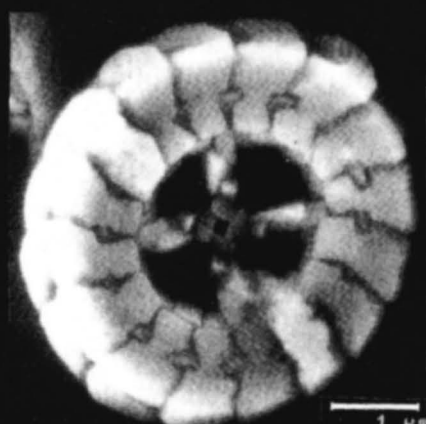
PLATE 1



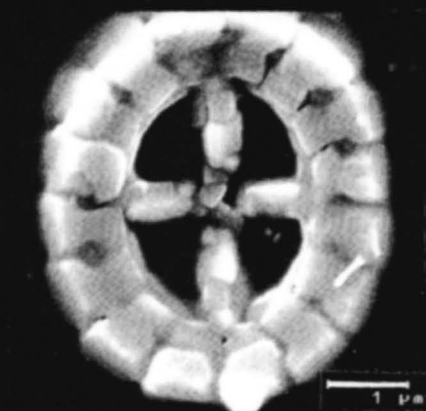
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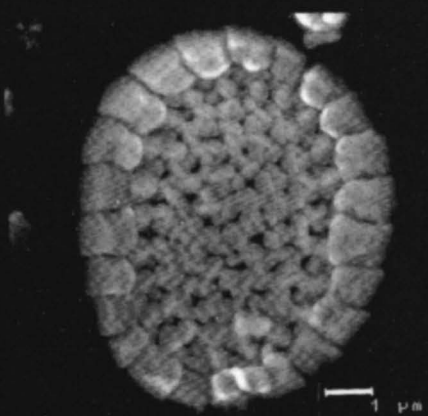
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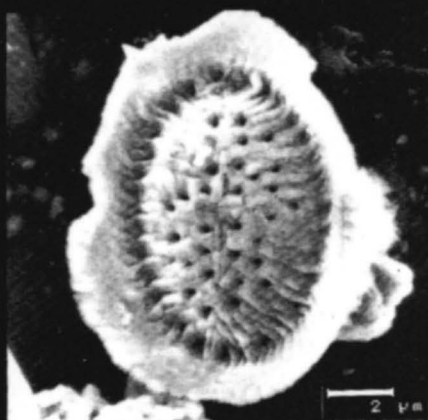
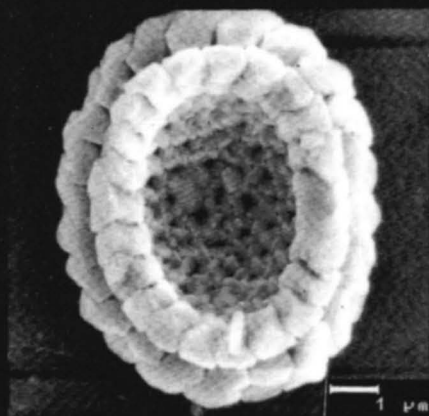
PLATE 2

- 5: *Cribrosphaerella ehrenbergi* (Arkhangelsky) Deflandre in Piveteau 1952
- 6: *Kamptnerius magnificus* Deflandre 1959
- 7: *Arkhangelskiella cymbiformis* Vekshina 1959
- 8: *Micula staurophora* (Gardet) Stradner 1963

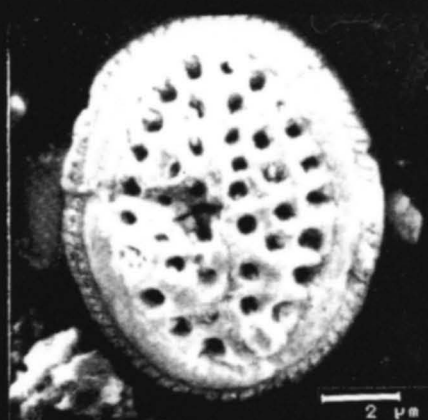
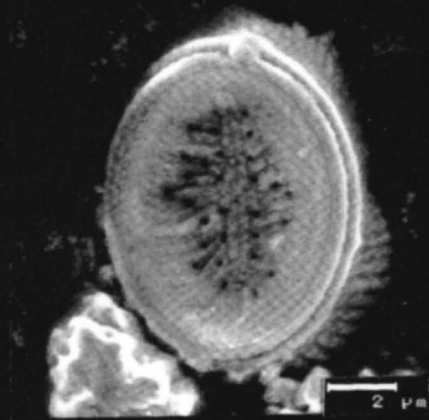
PLATE 2



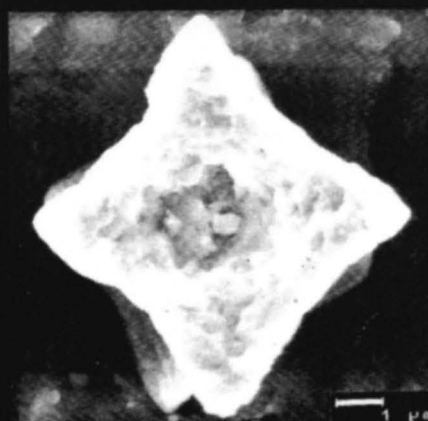
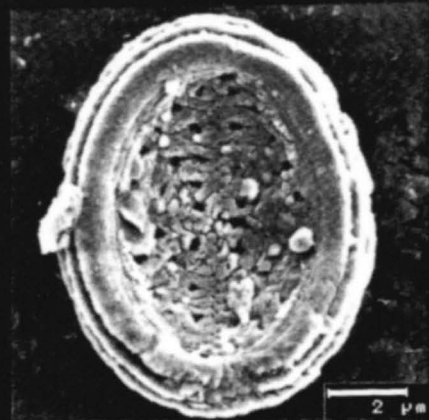
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