ACTA PALAEONTOLOGICA POLONICA

Procedures for obtaining optimal SEM images of coccolithophore debris in coccolith limestones

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Acta Palaeontologica Polonica 55 (1), 2010: 169-171 doi: http://dx.doi.org/10.4202/app.2009.0072

Coccolith debris in fossil zooplankton faecal pellets and the mode of its preservation are the unique source of data on the mode of feeding and digestion by ancient zooplankters. The animals are virtually absent in the fossil record in another form than their coprolites. However, minute structural details of coccospheres and their debris in the coccolith limestone are much less legible than in modern sediments. This paper presents how clear SEM images of details of coccolith plates in complete and dismembered coccospheres from fossil zooplankton faecal pellets can be obtained from thin sections of coccolith limestone. The images allow us to study the structural and compositional details of coccolith plates as well as their arrangements within the coccospheres and fossil faecal pellets.

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