

# Experimental diagenesis and quantitative assessment of *Discoaster* overgrowth

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Increase in pressure and temperature during burial diagenesis leads to dissolution and overgrowth of carbonate particles. Calcareous nannofossils represent a large part of sediments deposited on oceanic floor, and their remains undergo significant changes during burial diagenesis that finally lead to a loss of the most delicate specimens. The latter partially or totally dissolve, finally modifying the assemblage composition. Along with dissolution, overgrowth occurs on the most resistant specimens with subsequent changes in their morphologies.

This work aims at quantifying the diagenesis-induced overgrowth in nannofossil assemblages, focusing on *Discoaster* specimens, which were previously described as calcite receptors during experimental burial diagenesis (Adelseck et al., 1973). The diagenesis protocol described in the former paper is updated here, and well-preserved assemblages from Paleogene and Eocene ODP samples (Leg 198, Site 1209) and a Pliocene sample from the Trubi formation in Sicily underwent a 27-day long high pressure (up to 1 kbar) and, separately, high temperature (up to 300°C) conditions, using artificial seawater as medium. Overgrown discoasters were then measured through morphometry under scanning electron microscope. This study allowed for the first time to quantitatively assess the degree of overgrowth occurring within discoasters.

## References:

Adelseck, C.G., Geehan, G.W. & Roth, P.H. 1973. Experimental evidence for the selective dissolution and overgrowth of calcareous nannofossils during diagenesis. *Geological Society of America Bulletin* **84**, 2755-2762. doi : 10.1130/0016-7606(1973)84<2755:eeftsd>2.0.co;2