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Drilling *Challenger Mound* (Porcupine Basin, W of Ireland): a contribution to European research on the microbial mediation in carbonate formation at low temperatures ?

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In his monumental master work 'The Face of the Earth', the eminent Vienna geologist Eduard Suess has formulated visionary thoughts on fundamental topics ranging from the tectonic nature of Europe's margins to the role of the 'Biosphere', a word that he had coined in 1875. This word turned into a concept of *Life as a Geological Force* through the vision of Vladimir I. Vernadksy (Biosfera, 1920). Recent studies (Vasconselos et al. 1995) have unveiled the possible role of microbial mediation in the formation of natural dolomite, a mineral named after Déodat de Dolomieu (1750-1801).

But some of the most spectacular geological bodies, built by Life as a Geological Force, are the carbonate mounds. Carbonate mounds from the fossil record provide evidence of microbial mediation in the mound build-up and stabilization (Henriet et al. 2002). The study of carbonate mounds and associated cold-water coral reefs forms one of the first priorities of IOC/UNESCO's new programme "Geosphere-Biosphere Coupling Processes" (GBCP).

IODP Expedition 307 (Modern Carbonate Mounds: Porcupine Drilling) sets sail end of April, 2005 to the Porcupine Seabight, West of Ireland, to investigate the possible role of geofluids, microbial consortia and cold-water corals in the genesis and growth of *Challenger mound*, a giant carbonate mound towering over 170m above an enigmatic erosional surface, in water depths close to 1000m.