Late Cretaceous deposits from Zakynthos Island (Preapulian Zone, Ionian Sea, western Greece): evidence from calcareous nannofossil dating and microfacies analysis

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The Ionian Islands are situated on the western Hellenic Arc, part of the most active plate margins in the Mediterranean Sea. The westerly-verging Hellenides fold-and-thrust belt in this area comprises the deformed Mesozoic-Cenozoic succession of the Ionian Zone, which thrusts over the time-equivalent slope unit of the Preapulian Zone. The basal front of this tectonic contact outcrops along the eastern edges of Kefalonia and Zakynthos Islands.

The purpose of this study was to investigate both the nannoflora assemblages and microfacies of Zakynthos carbonate deposits and attempt to determine whether the transition between the Apulian Platform (Italy) and the Ionian Basin (Greece) is uninterrupted under the Ionian Sea and subsequently exposed on the island.

Most of the samples proved to be barren of nannofossils, perhaps due to an intense diagenetic and tectonic history. However, a section on Zakynthos Island (Lithakia-Agalas) was both continuous and relatively prolific for nannofossils, and the strata form a north-east dipping monocline that spans the transition from the edge of the Apulian Platform (westernmost edges) and the pre-Apulian slope facies. Microfacies analyses pointed to a more proximal depositional setting, becoming increasingly shallower towards the west, where platform margin facies occurred. Calcareous nannofossil assemblages were dominated by *Watznaueria barnesiae*, *Quadrum gartneri*, and *Retecapsa crenulata*. Campanian-Maastrichtian markers, such as *Reinhardtites levis*, *Quadrum trifidum*, and *Broinsonia parca*, occur in the central and eastern part of the island, indicating a Campanian-Maastrichtian age.

The only other sampled sections that contained nannofossils were in the north of Zakynthos Island, around the village of Orthonies. Here, a typical slope succession contained poor nannofossil assemblages. This succession is no older than the Turonian, as suggested by the occurrence of *Micula staurophora*, and the oldest part of the section is no younger than early Campanian, as indicated by *Lithastrinus grillii*.

The absence of representative nannoflora of Coniacian and Santonian ages may suggest a potential hiatus, which was possibly caused by faulting towards the western edge of the section.