

The occurrence of chitinoideidellids in palynological residues from the Ammonitico Rosso Formation (Tithonian), Spain

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ABSTRACT

This study deals with the recovery of chitinoideidellid specimens in palynological residues and their usefulness as biochronologic tools. We sampled specimens—which represent a very small group of ancient planktonic ciliates of uncertain origin that appeared in the early Tithonian and lasted until the late Tithonian in the Jurassic—from the upper part of the Ammonitico Rosso Formation, outcropping in southeastern Spain (Sierra de Crevillente, Congost section). Chitinoideidellid associations allowed us to attribute the lower part of the succession studied to the early Tithonian (Chitinoideidella Zone). The palynological preparations reveal urn-shaped bodies 60–140 μ long, which we interpret as chitinoideidellid remains. These organic-walled objects show the organic nature of chitinoideidellid loricae, which, as previously suggested, were probably chitinous. The loricae consisted of a continuous organic lining and suggest that the presence of calcite crystals was limited to single dispersed crystallites rather than their occurrence in layers, as suggested by earlier reports. This study shows that palynological extraction of chitinoideidellids can yield more information on the morphology and, thus, on the phylogeny of this planktonic group than the traditional thin-section approach.