

Dating paleontological collections that contain poorly documented specimens

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Natural History Museums often have specimens in their paleontological collections, sometimes even holotypes, whose biostratigraphy, for various reasons, is not always well established. Either the fossil site has disappeared, the precise location is not accurately known, the age is just presumed or attributed but not justified, or specimens are only given a chronostratigraphic stage or preferable, a geological level or formation. These facts may present serious difficulties for specialists undertaking systematic, phylogenetic, and/or biostratigraphic studies.

Calcareous nannofossils are currently demonstrating their usefulness in solving such difficulties by combining their value as biostratigraphic markers and the small amount of sample needed for their study. To date, ten samples of sediment associated with Mesozoic (Jurassic and Cretaceous) fossil echinoids belonging to the Museu de Geologia de Barcelona, Museo Paleontológico de Elche (both in Spain), and Université Claude Bernard-Lyon 1 (France) have been analyzed. A smear slide was prepared

from each sample, and a minimum of 300 coccoliths was counted. A number of additional transects were made to check for rare occurrences of biostratigraphic markers. Zones NJT 15b, NJT 17a, and NJT 17b of Castellato (2010) and Zones UC5 and UC7 of Burnett (1998) were recognized. The results allowed us to give precise dates to the samples, thus increasing the interest of the museums' paleontology departments for continuing this type of study.

References

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