Turkish Journal of Earth Sciences

Turkish Journal

of

Earth Sciences

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Numerical Ages of Selected Rudist Bivalvia: Preliminary Results

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Abstract: The ranges of most biostratigraphically diagnostic fossils have been calibrated to the geologic time scale in mega-annums. Five methods for integrating fossil ranges with the numerical geologic time scale are currently used: (1) species in stratigraphic positions with radiometrically dated beds; (2) strontium isotopes of unaltered shell material; (3) cyclostratigraphic frequencies of enclosing strata; (4) integration with zones and sequence stratigraphy; and (5) graphic correlation. Preliminary studies show that rudist occurrences have been calibrated in numerical ages by Sr isotopes, zonal integration and graphic correlation. Where the same species are dated by two methods, a more complete range is the result. The different methods not only complement each other, but also test each other. This preliminary survey demonstrates the feasibility of compiling an extensive stratigraphic database of each species and calibrating the numerical ranges in each section in order to define the maximum ages and the region of origins of rudist species.

Turkish J. Earth Sci., **19**, (2010), 769-790.
Full text: pdf
Other articles published in the same issue: Turkish J. Earth Sci.,vol.19,iss.6.