

Palynology of the Late Jurassic to Early Cretaceous: An Experiment in Modelling the Transition Using a Global Database

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A better knowledge is required of the palynological criteria by which one recognizes the Jurassic - Cretaceous boundary. It appears to be transitional, evident by the evolution and increasing dominance of schizaeaceous spores from the Late Jurassic into the Early Cretaceous. Clearer definition of this pattern would assist in interpreting the age of sections such as Mt. Minnes (54°10'N, 120°04' W), type section of the Minnes Group.

This paper reports an experiment in modelling the global palynological record of the Late Jurassic and Early Cretaceous from palynomorph occurrences recorded in the Palynodata, a database of over 20,000 pieces of literature. White and Jessop (in press) have argued that the pattern of occurrence of a fossil in Palynodata can be used to approximate the "real" time-space distribution of the fossil. Using a geographic co-ordinate file of published studies and in-house Palynoplot software, the distribution patterns of fossils can be visualized through binning and plotting literature records by time and modern latitude. These plots reveal fundamental temporal and latitudinal distribution patterns, as well as the high study density in northern mid-latitudes and potential taxonomic and data problems. In addition to individual plots of taxa, several taxa records can be normalized to one and visualized in a multilayered display by using a GIS system. Fossil distributions can be presented on rotated paleoplates to assist in recognizing paleoclimatic tolerances of fossils and elucidating this aspect of the J-K boundary.