

Late Early to Late Devonian palynological events in Western Gondwana: an application to northern Saudi Arabia

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A miospore zonal scheme for late Early to Late Devonian strata of Western Gondwana, combining criteria used in southern Euramerican biozonations with the occurrence of western Gondwanan species, is proposed.

The scheme results from ongoing investigations by the same group of workers in various parts of North Africa and Brazil and is based on the succession of first appearances of distinctive zonal taxa or groups of taxa. These can be dated by comparison of Gondwanan miospore assemblages with similar palynofloras of faunally calibrated interval zones defined in the Ardenne-Rhenish regions, on one hand, and interregional assemblage zones from the Old Red Sandstone Continent, on the other.

The application of the Gondwanan zonal scheme to the subdivision and dating of recently analyzed Devonian sequences of northern Saudi Arabia is now demonstrated.

The thus far investigated stratigraphic sections of that area range in age from late early Emsian to late early Frasnian. Due to the local scarcity or even probable absence of some index species of the reference biozonations, a detailed subdivision cannot be established for the Saudi Arabian sections. Therefore, a comprehensive threefold palynozonal subdivision is preferable. The identification of some distinctive miospore events permits new insights into the recognition of Devonian stage limits within the studied interval.