Spore assemblages from the Silurian of Saudi Arabia

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Well preserved and diverse palynomorph assemblages have been recovered from core material from Silurian sequences in boreholes from Saudi Arabia. They are dominated by spores but most also contain acritarchs and/or chitinozoans. There is little published work on Silurian spores from the Middle East, and consequently biostratigraphic analysis of the spore assemblages relies on comparisons with palaeogeographically distant regions (e.g. North Africa, Spain, Great Britain and North America) where the stratigraphical distribution of Silurian spores is well documented. Nonetheless, age determination based on spore biostratigraphy has been attempted and in many cases may be independently tested based on acritarch, chitinozoan and invertebrate biostratigraphy. It is becoming clear that the sequence of spores in the Middle East differs from that reported in Laurentia and Avalonia. In the Middle East trilete spores and ornamented hilate cryptospores appear to make their inception earlier, and envelope-enclosed cryptospores persist in relative abundance for longer. However, the occurrence of sequences of well preserved spore assemblages with independent age constraint has enabled development of a regional spore biostratigraphy for the Silurian of Saudi Arabia. Palynofacies analysis indicates that most of the deposits accumulated in a regressive regime. Deposition commenced in normal nearshore marine environments, that gradually shallowed, with the final phases of deposition occuring in non-marine environments.