

The early land plant fossil record from the Silurian of the Arabian Plate: palaeophytogeographical and palaeoclimatological implications

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The early land plant fossil record from the Silurian of the Arabian Plate is confined to dispersed spores present in palynological preparations. Due to deep desert weathering palynomorph recovery on the Arabian Plate is almost exclusively from boreholes. Nonetheless, rich palynological preparations containing abundant and well preserved palynomorphs of low thermal maturity are known from numerous boreholes in Saudi Arabia. These are all from marine strata and dominated by marine palynomorphs (acritarchs, chitinozoans, Scolecodonts etc.). However, they often also contain abundant dispersed spores that were transported into the ocean. This has enabled the sequence of dispersed spores to be established for the Silurian of the Arabian Plate. Analysis of the temporal and spatial distribution of these spores sheds light on the early evolution and palaeophytogeography of the Silurian vegetation of the Arabian Plate. Comparison with the dispersed spore record developed in coeval sequences from elsewhere demonstrates a similar sequence over the megacontinent Gondwana. However, smaller, isolated continents (e.g. Laurentia) and islands (e.g. Avalonia and Baltica) show different sequences of spore biotas. This talk will outline the palaeophytogeographical differentiation demonstrated by Silurian land plant spores and attempt to track migratory pathways. It will also consider the influence of climatic belts on Silurian plant distribution.

Keywords: Saudi Arabia, plants, spores, palaeophytogeography, palaeoclimate

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