

Micropalaeontological analysis of the Aalenian, Hasty Bank plant-bed section of North Yorkshire, UK: a case history illustrating the value of a multi-disciplined approach to fluvio-deltaic, biostratigraphic evaluation. –

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The Hasty Bank outcrop of lowermost Saltwick Formation (Aalenian) of North Yorkshire was established as an important plant fossil locality by Black (1929) and has since been repeatedly analysed by palaeobotanists and palynologists. Despite the large body of data arising from these disciplines the palaeoecological interpretation of the sequence remained equivocal with the degree of marine influence loosely defined: biostratigraphic correlation with other outcrop sections is also problematic due to rapid lateral facies changes and the presence of a significant erosion surface within the section. As a part of the an ongoing biostratigraphic evaluation of the Middle Jurassic Ravenscar Group, for the first time the Hasty Bank section has been extensively sampled for micropalaeontological analysis, this involving the extraction of foraminifera, megaspores, large miospores and plant-derived debris. Applying the micro-biofacies model previously used on other M. Jurassic fluvio-deltaic sections, there is now strong evidence for tidal influence in a brackish, bay-fill depositional setting for the lower section with superabundant, monotypic assemblages of the foraminifera *Trochammina* cf. *squamataformis* associating with the ‘mangrove’ type pteridosperm *Pachypteris papillosa*. An abrupt shift into a non-marine, delta-plain sequence indicates downlap across an erosion surface. This upper sequence yields the megaspore *Erlansonisporites sparassis* atypical of the Aalenian, Saltwick Formation which raises questions as to the stratigraphic affinities of the upper section.

Reference: Black, M. 1929. Drifted plant beds of the Upper Estuarine Series of Yorkshire. *Quarterly Journal of the Geological Society, London*, **85**, 389-439