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A METHOD OF PALYNOFACIES ANALYSIS USING CLUSTER ANALYSIS OF TRANSFORMED RELATIVE ABUNDANCE DATA

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Lithofacies in the Silurian of the central Appalachians are quite mixed - ranging from terrestrial soils, to braided fluvial, to paralic, to normal shallow marine and ending in various carbonate facies in uppermost Silurian sequences. Palynomorph recovery is good throughout the System, although it progressively degrades in the uppermost carbonate units. We present here a simple method of palynofacies analysis based on minimum variance cluster analysis of transformed palynomorph data. The octave class scale is a weighting function that converts percentage counts into a 10 relative abundance classes based on a modified $\log_2$ scale. It was created by Gauch (1982) as a method for analyzing community ecological data, and was found effective in PCA used in systematic palynological applications by Kovach & Batten (1994). The transformed data gave 6 clusters that we labeled as palynofacies based on taxonomic content and lithofacies associations: "Rose Hill" Marine, Nearshore, Transgressive, "MacKenzie" Marine, Tidal Flat and Nonmarine. The palynofacies were matched between a section near Allenport Pennsylvania and Bluegrass Virginia. These assemblages do not correspond to formations, but they are traceable over regional distances even though lithostratigraphic units vary considerably in thickness. This method has the advantage of incorporating both short-lived and long-ranging acritarch species with less abundant non-marine material. We are testing the robustness of the method, but it appears to be a first step away from one-dimensional "onshore vs. offshore" type of analysis that punctuates the literature of Palæozoic palynology.

POLLEN EVIDENCE FOR PREHISTORIC HUNTER-GATHERER IMPACTS ON VEGETATION AND ENVIRONMENT AT PORT AU CHOIX, NEWFOUNDLAND

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Pollen analytical work in the boreal forests of Canada has largely focussed upon the interpretation of natural changes. In boreal Europe, where human influence on natural vegetation is far more profound, many pollen analysts have examined its effects. However, there the emphasis has been upon the impact of Neolithic agriculture on the forest, rather than upon evidence of the relatively minor impact of earlier nomadic Mesolithic hunter-gatherers. Two of the goals of the *Port au Choix Archaeology and Landscape History Project* are (i) to understand the prehistoric occupation of the region in the context of landscape and climate change, and (ii) to examine the potential impact of occupation on the landscape, with particular emphasis on vegetation and landscape stability. This presentation focuses on the second goal.

Port au Choix, a coastal community on Newfoundland's Great Northern Peninsula, is one of the richest archaeological regions of eastern Canada. Rich marine resources offshore have attracted humans to Port au Choix from at least as early as 5500 years ago to the present day. Prehistoric inhabitants include Maritime Archaic Indians (5500-5400 and 4100-3100 BP), Groswater Palaeoeskimos (2800-1800 BP), Dorset Palaeoeskimos (2240-1190 BP), and Recent Indians (2120-1260 and 1080-750 BP). Significant archaeological sites include the Maritime Archaic Indian cemetery and habitation (Gould) site, the Groswater and