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Ecological changes in Pennsylvanian (Asturian and early Cantabrian) coal floras inferred from lycophyte microspore abundances

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ABSTRACT. — The distribution and relative amounts of six genera of lycophyte microspores, *Lycospora*, *Densosporites*, *Crassispora*, *Cirratriradites*, *Endosporites* and *Cadiospora*, are compared in the Pennsylvanian coals from the Dobrudzha and Forest of Dean coalfields, clastic sediments from the Glace Bay borehole in the Cape Breton Coalfield, and the southern crop of the South Wales coalfield. Inverse relationships are shown between *Lycospora* and *Densosporites* and between *Lycospora* and *Crassispora* in samples from all of the coalfields. The changes in microspore assemblages suggest there were at least five different communities of lycophyte plants growing in the Pennsylvanian swamps. Changes in microspore assemblages at the Asturian/Cantabrian boundary mirror the previously described macrofloral changes at this time.

Keywords: Pennsylvanian, lycophytes, microspores, ecological changes.

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