



## The late Westphalian D – Early Cantabrian palynology of Europe and the Canadian maritimes

### Палинология на късен вестфал D – ранен кантабрий от Европа и канадското крайбрежие

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Using miospore distributional data, and the known correlations between miospore taxa and parent plants, the palaeofloral assemblages have been reconstructed for the Dobrudzha Coal Basin, the South Wales and Forest of Dean Coalfields (Fig. 1) and Sydney Coalfield (Canada). This present report summarizes the biostratigraphical significance of the fossil spores and pollen from some of the coal seams and clastic material in the different basins, based partly on a reassessment of the palynological preparations made by Dr. G. Dolby in Canada, Dr. E. Spinner in UK and the senior author in Bulgaria. The results confirm the essential uniformity of the vegetation across the Variscan Foreland, with most of the slight observed differences being due to minor variations in elevation between the coalfields.

In the late Westphalian D, there is some evidence of a progressive increase in the Lycophyte, backswamp vegetation, with a distinct “spike” in the *Lycospora* curve observable near the Westphalian/Cantabrian boundary. We have been able to refine

considerably the palynological biostratigraphy for the upper Westphalian D and lower Cantabrian. The stratigraphically lowest occurrence of the genus *Vesicaspora* coincides with the base of the macrofloral *Dicksonites plueckenetii* Subzone in the upper Westphalian D. The base of Cantabrian Stage can be identified approximately with the increases in the abundance of the species *Thymospora pseudothiesenii*, *Schopfites dimorfus* and *Cadisporea magna* and the first appearance of *Lundbladisporea gigantea* and *Angulisporites splendidus*.

Using miospore biostratigraphical data from western Europe (Cleal et al., 2003) several of these taxa have been identified as being important indices for the Westphalian – Stephanian boundary, and this has allowed more precise stratigraphical correlations to be achieved for the Dobrudzha succession. These data have helped refine the stratigraphical correlation of the upper part of the Dobrudzha Coal Basin succession. The continental Gurkovo Formation (Dimitrova, 2001, 2004a, b) is assigned to the *Thy-*

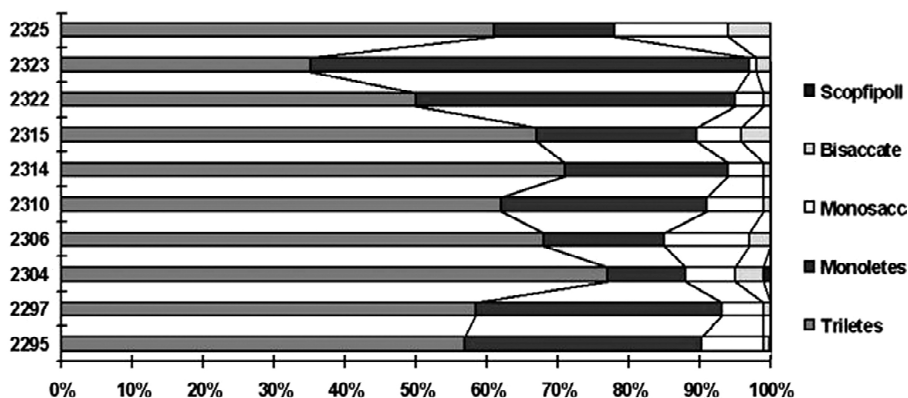


Fig. 1. The percentage of the microfloristic groups from the coal seams of the Forest of Dean Coalfield

*mospora* spp. Zone and sees the first regular occurrence of *Thymospora thiessenii* and *Thymospora pseudothiessenii*.

Analysis of the microflora of the Coalfields assignment to the some palynozones described by Clayton et al. (1977). The stratigraphical boundary, which we discussed, are proposed by Clayton with two

zones: *Thymospora obscura* – *T. thiessenii* (OT); *Angulisporites splendidus* – *Latensina trileta* (ST).

The analysis indicates that complex factors are responsible for changes in plant diversity and vegetation patterns. These are related to climate and the current state of revision of the flora in each basin.

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