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Poster

Palynostratigraphy and thermal maturity assessment in syn-orogenic thrusting units: A case study from the Late Mississippian deposits of the Tinghir area (Sub-Meseta zone, Morocco).

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The micropaleontological study of limestone samples from the Tazlourt Formation, in the Tinghir region, led to the first discovery of miospores derived from herbaceous and sub-arborescent lycopsids, small fern and sphenopsids belonging to both non-forest mire, and forest mire. The palynological assemblage also includes rare occurrences of marine phytoplankton (i.e. *Lophosphaeridium* spp.). Among the continental palynomorphs, a few significant marker taxa, such as *Grandispora spinosa* (Fig. 1A), *Dictyotriletes bireticulatus* (Fig. 1B), *Cirratiradites* cf. *rarus* (Fig. 1C), *Schulzospora* cf. *campyloptera* and *Punctatisporites gretensis* (Fig. 1D), enable a confident attribution to the upper Serpukhovian stage (the *subtriquetra-ornatus* or SO spore Zone of Clayton et al., 1977). This proves the presence of the uppermost Mississippian deposits at the southern front of the Moroccan Variscan chain. The kerogen released by the analyzed samples is predominantly of continental origin, mainly composed of opaque phytoclasts with different sizes and shapes, while translucent phytoclasts and miospores are less represented. The analysis of microfacies, as well as the qualitative and quantitative parameters of the various components of the palynofacies, indicates a shallow to moderately deep neritic environment and supports the existence of a connection to the "Variscan Sea" between the Anti-Atlas domain, located on the northwestern margin of the stable Gondwana craton, and the Moroccan Hercynides, situated at the southwestern margin of the Variscides. The miospores are characterized by significant alteration in texture and color (see Fig. 1), with

Spore Color Index (SCI) values ranging from 5 to 8 and advanced silicification. This is likely related to the combination of tectonic events that affected the study area during the Meso- and Post-Variscan phases.

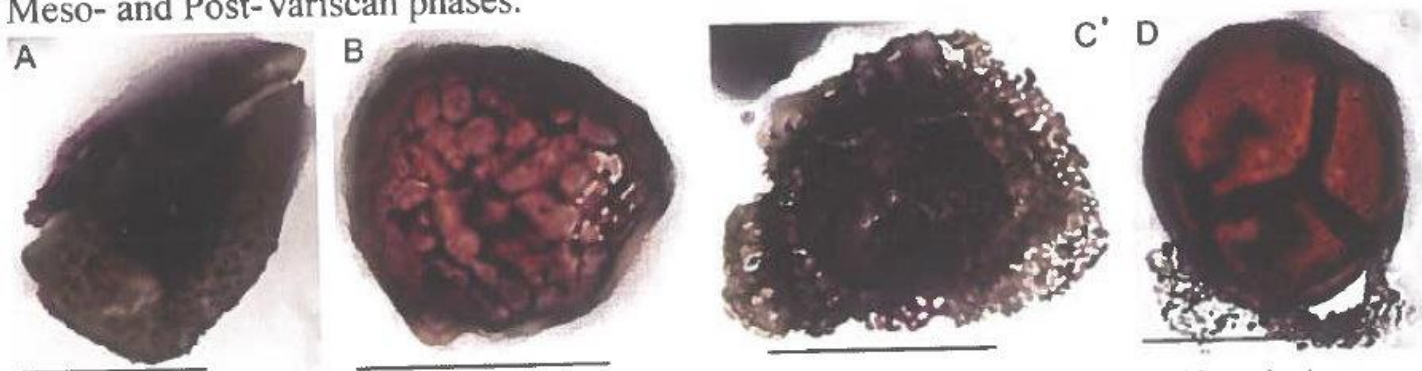


Figure 1. Palynological assemblage of the Tazlourt Formation (scale bar – 40 μm). A. *Grandispora spinosa*; B. *Dictyotriletes bireticulatus*; C. *Cirratriradites cf. rarus*; D. *Punctatisporites gretensis*.

Reference

Clayton, G., Coquel, R., Doubinger, J., Gueinn, K.J., Loboziak, S., Owens, B., Streel, M. 1977. Carboniferous miospores of Western Europe: illustration and zonation. *Mededelingen Rijks Geologische Dienst* 29, 1–71.