Changes in the Early Miocene palynoflora and vegetation in the east of the Rubielos de Mora Basin (SE Iberian Ranges, Spain)

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With 12 figures and 2 tables


Abstract: This paper reports on a palynological study of Early Miocene (Ramblian-lower Aragonian) miospores from the eastern part of the Rubielos de Mora Basin (eastern Spain). Analysis of the palynological assemblages in the area’s facies associations (fluvial and fluvio-lacustrine, terrigenous and carbonate lacustrine, and anoxic-carbonate lacustrine) allowed the identification of 86 taxa (bryophytes, pteridophytes, gymnosperms and angiosperms). The climate of the region was influenced by its mountainous nature, and the landscape was characterized by coniferous forests. However, a close relationship was observed between the palaeogeographic development of the basin, which had different depositional environments, and the palynological assemblages examined. The fluvial sediments showed higher percentages of pollen belonging to hydro-hygrophytic and riparian taxa than the lacustrine sediments, which mainly contained mesophytic and thermal taxa. A humid subtropical climate was inferred using the so-called “coexistence approach”. The palynological results obtained were contrasted with the megafloral assemblage of the Rio Rubielos outcrop and compared to Early and Middle Miocene pollen data from the Western Mediterranean Region and the Iberian Peninsula.

Zusammenfassung: An der Ostseite des Beckens von Rubielos de Mora (Ost-Spanien) wurde eine palynologische Studie im Unteren Miozän (Ramblian-Unteres Aragonien) durchgeführt. Die Analyse der Palynomorpha ermöglichte die Bestimmung von insgesamt 86 Taxa: Bryophyten, Pteridophyten, Gymnospermen und Angiospermen. Die Auswertungen zeigen, dass enge Zusammenhänge zwischen den verschiedenen Ablagerungsräumen und den palynologischen Gruppierungen bestehen. So enthalten fluviatile Sedimente prozentual höhere hydro-hygrophytische und uferbegleitende Taxa als die Sedimente, die primär durch mesophytische und wärme-