

Palaeoclimate reconstructions for the Late Miocene in the Southeast Bulgaria using pollen data from the Tundzha Basin

Ivanov D.

Institute of Botany, Bulgarian Academy of Sciences, Acad. G. Bonchev Str., Bl. 23, BG-1113 Sofia, Bulgaria, dimiter@bio.bas.bg

The results of palaeoclimate reconstructions of Neogene freshwater deposits of the Tundzha Basin (South Bulgaria, SE Europe) are presented. We analysed pollen and spores complexes with the aim of obtaining data about the climate conditions. The palynological analysis was performed on clayey sediments of the Elhovo Formation intercalated between coal layers from core C-432 situated in the central part of the Basin. The climate data reconstructed by the Coexistence Approach indicate a warm temperate climate with mean annual temperatures around 16 °C and with mean temperature of at least 5 °C during the coldest month. With annual precipitation rates commonly around 1000 mm climatic conditions were overall humid. Partly seasonally drier conditions suggested for the topmost part of Elhovo Formation by previous studies, were not evident from recent analyses. The Early Pontian climate was about 3-4°C warmer than today, with rainfalls at least 300 mm higher. These data coincide with the warming trend recognised in other regions in Bulgaria during the Early Pontian. Thus the data from current study contribute to the elucidation of the evolution of the local and regional Late Miocene climate patterns and contribute to the palaeoclimate model for the Balkan Peninsula.

Upper Jurassic – Lower Cretaceous platform-to-basin integrated stratigraphy across the Bulgarian/Serbian border

Ivanova D.¹, Koleva-Rekalova E.¹, Lakova I.¹, Stoykova K.¹, Ivanov M.², Metodiev L.¹, Petrova S.¹, Tchoumatchenco P.¹, Rabrenović D.³, Radulović V.³ and Malešević N.³

¹*Geological Institute, Bulgarian Academy of Sciences, 24 Acad. G. Bonchev Str., 1113 Sofia, Bulgaria, dariaiv@geology.bas.bg*

²*Department of Geology & Paleontology, Faculty of Geology & Geography, Sofia University St. K. Ohridski, 15 Tsar Osvoboditel Blvd., 1504 Sofia, Bulgaria*

³*Department of Geology, Faculty of Mining and Geology, University of Belgrade, 6 Kamenička Str., 11 000 Belgrade, Serbia*

This report presents the results of integrated microfossil biostratigraphy, facies and microfacies analyses with the purpose of age determination, correlation and tracing out of the carbonate platform-to-basin transition in the Callovian to Valanginian carbonate sequences across the Bulgarian – Serbian border.

The Upper Jurassic and Lower Cretaceous are of wide occurrence in the western Bulgaria and eastern Serbia. The sediments deposited in a bathymetrically differentiated basin, associated with the gradual emergence of the southern landmass and the formation of the Central Moesian Basin. The shallow-water sections are located in the southwestern prolongation of the Western Moesian Carbonate Platform and belong to the West Srednogorie Unit (Bulgaria) and Vidlič/Tepoš Zone (Serbia). The main part of the carbonate platform is represented by the limestones of the Slivnitsa Formation (Bulgaria) and the Crni Vrh Limestones (Serbia). Both formations are built up by thick-bedded to massive light grey to whitish organogenic and less common micritic limestones containing a large number of benthic foraminifers and algae, colonial corals, rudists, brachiopods, crinoids, gastropods and other benthic forms. The age interval is Callovian to Valanginian based on foraminifera and calcareous dinocyst. Six successive foraminiferal zones are recorded. Seven facies (facial zones) with specific microfacies types are superposed within the platform carbonates: homoclinal ramp (peloidal); reef and perireef (bioclastic); subtidal lagoon (nonfossiliferous and oncoidal), intertidal flat (fenestral and foraminiferal); subtidal lagoon (foraminiferal); reef