## The reconstruction of the Late Miocene flora and climate from the Sofia Basin (South-West Bulgaria) based on palynological data

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In this study, we reconstruct the Late Miocene palaeoenvironmental conditions for the Sofia basin (South-West Bulgaria) based on palynological data. The investigated samples originate from freshwater sediments of core C-14 and outcrop PG-1. The age of sediments was determinated as Pontian to Dacian on the basis of molluscs, mammals and diatoms. For the vegetational reconstructions we analyzed 145 pollen samples aiming to identify plant communities and their temporal and spatial distribution. Dominant plants in the zonal vegetation were floristic elements growing under warm-temperate climatic conditions (species of the genera *Quercus, Ulmus, Zelkova*, *Fagus, Carpinus, Betula, Castanea*). Significant role in the composition and structure of the fossil vegetation also played swamp forests (Taxodiaceae, *Alnus* and *Glyptostrobus*), herbaceous palaeocoenoces (Chenopodiaceae, Poaceae, Asteraceae and Apiaceae) and aquatic vegetation (*Typha, Sparganium*, *Potamogeton* and Nympheaceae). We applied the Coexistence Approach method to obtain quantitative palaeoclimatic data. Four climate variables are considered for climate reconstructions, namely: mean annual temperature (MAT), temperature of the coldest month (CMT), temperature of the warmest month (WMT) and mean annual precipitation (MAP). Quantitative climate data derived from fossil floras indicate warm temperate climatic conditions, with mean annual temperature of 12.9-17.2°C, temperature of the coldest month 1.7-6.6°C, temperature of the warmest month 23-27.8°C and annual precipitation between 828 and 1308 mm. The climate parameters have been compared with those from the paleoclimatic investigations of other Neogene basins in South Bulgaria which show similar results. Thus all the data contribute to better understanding of climate evolution in the Southeast Europe during the late Miocene.

## Tertiary lignoflora in Carpathian Curvature

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A new collection of Oligocene fossil woods coming from the Great Curvature of Carpathians, Romania, define a very new area for petrified woods occurrence which deserves a special interest because its age and its novelty. Beside this, it's a region where amber appears within formation of the same age and a relation between is to be searched since a clear connection of amber and amber-generator tree never has been found. Previously in this area only some Oligocene petrified woods found and identified as species of *Sequoioxylon gypsaceum* (GOEPP.) GREGUSS, *Laurinoxylon murgoci* PETRESCU and *Icacinoxylon* sp. *we*re cited. Also by the analysis of pollen grains preserved in amber, beside conifers, oaks and elms have been identified within that forest (*Cupuliferoidaepollenites liblarensis*, *Ulmipollenites undulosus*) indicating a Mixed Mesophytic Forest – otherwise a typical Oligocene Carpathian vegetation. The new collection of petrified woods found in a large area within Carpathians' Curvature have been studied and identified as morphotaxa belonging to Conifers or Angiosperms and recent field trips in that area let us to hope more than this.