



Palaeoecological construction from the Oligo-Miocene coal deposits of Gelibolu Peninsula, NW Turkey.

Ferdi Demirtaş (1), Erdal Koşun (1), Mehmet Serkan Akkiraz (2), Mustafa Bozcu (3), and Koray Koç (1)

(1) Department of Geological Engineering, Akdeniz University, Antalya, Turkey, (2) Department of Geological Engineering, Dumlupınar University, Kütahya, Turkey, (3) Department of Geological Engineering, Çanakkale Onsekiz Mart University, Çanakkale, Turkey

The palynomorph composition of the Upper Oligocene and Miocene coal deposits from Gelibolu peninsula, NW Turkey, was analyzed to determine the palaeoclimate conditions. The samples were collected from two different abandoned coal mines. Also two different palynological assemblages were reported. The first one belongs to the Late Oligocene (Osmancık Formation). The other one is the Miocene (Gazhanedere Formation). The Late Oligocene palynological assemblage consist mainly of *Alnus*, Myricaceae, Cyrillaceae-Clethraceae, *Calamus* and *Castanea*. Riparian vegetation or wetland forest community incorporate high amounts of *Alnus*, and low percentages of deciduous *Salix*, *Pterocarya* and *Carya*. *Calamus*, which is a stratigraphical marker for the Late Oligocene of the Thrace Basin, was also recorded in high quantities. The content of the Miocene palynological assemblage is different from the Late Oligocene assemblage, and is mainly made up of Polypodiaceae, Poaceae, Chenopodiaceae, Myricaceae, Oleaceae, Cyrillaceae-Clethraceae and Sapotaceae. *Calamus* and *Alnus* totally disappear here. In contrast, open vegetation elements such Poaceae and Chenopodiaceae occur frequently. The palaeoclimate calculations were made by the help of coexistence approach method. The late Oligocene association contains a total of 18 taxa, 11 of which were used for calculating the coexistence intervals. The values obtained 15.6 to 21.1 °C for annual temperature, 5.0 to 13.3 °C for winter temperature, 24.7 to 28.1 °C for summer temperature and, 1096 to 1355 mm annual rainfall. In the Miocene palynological assemblage 23 taxa were identified. The palaeoclimate calculation is based on the 21 taxa. Quantitative data indicate the values for the mean annual temperature 15.6-21.3 °C, for the winter temperature 5.0 to 13.3 °C, 24.7- 27.9 °C for summer temperature and 823-1520 mm for the annual rainfall. The palaeoclimate was warm and contained dry seasons due to lower boundary of annual precipitation lying at 823 mm during the Miocene. This may be linked ecological dominance of open-habitat grasses such as Poaceae and Chenopodiaceae.