

PALEOGRAPHIC EVOLUTION OF THE WEST MARGIN OF THE ÇANKIRI-ÇORUM BASIN IN EARLY-MIDDLE MIOCENE

Levent KARADENİZLİ*** Gürol SEYİTOĞLU****, Gerçek SARAÇ*****, Nizamettin KAZANCI*****, Şevket ŞEN***** , Yavuz HAKYEMEZ*** and Didem SAVAŞÇI****

ABSTRACT.- Çankırı-Çorum basin is one of the many basins developed during Tertiary time in central Anatolia and had important sedimentary accumulation from Paleocene to Pliocene. In this study, tectono-sedimentary development of western part of the basin during the Early - Middle Miocene has been examined. In this time interval, under the extensional tectonic regime Kumartaş formation accumulated and its upper part laterally-vertically passed into Hançili formation. The age of these formations is based on the mammalian fossils (MN 3-4-5) and facies analysis has been made by measuring logs from appropriate sequences. As a result of the facies analysis, following facies have been determined: Non-organized massive conglomerate, graded-matrix supported conglomerate, bedded-grain supported conglomerate, massive sandstone, trough-planar cross-bedded sandstone, ripple laminated sandstone, sorting-bedded sandstone, massive gravelly mudstone, organic matter rich claystone, massive marl, green-yellow colored laminated claystone, bedded fossiliferous limestone, oolitic limestones, lignites and tuffite. The facies interfinger with each other and form certain associations. The facies associations show that three different sedimentary environments were formed in Early-Middle Miocene time. These are; alluvial fan and rivers (braided with sediment - gravity flow deposits, meandering river and flood plain environments, lacustrine shoreline (fan-delta, near shore sand bars, carbonate bank) and lacustrine offshore (deep and shallow lake) environments. Normal faults representing extensional tectonic regime in the region have controlled the basin margins and the vertical movements of paleohighs in the basin and cause the fluctuations of lake level. When the lake level failed, intense erosion in the adjacent uplifted land areas occurred causing to the deposition of the alluvial fan and fan-delta sediments which supplied abundant elastics to the lake basin. However, when the lake level rised, the sand bars were formed by reworking of the previously transported elastics into the lake basin. During the periods with no clastic influx the carbonate banks developed. In some period it is clear that rising water level completely covers the paleohighs. The basin was fragmented by normal and a tectonic slice of thrust faults at its western and eastern margins respectively and the deposited Miocene sediments were deformed during Late Pliocene.