



## Paleoclimatic implications of the red continental deposits from south-western Transylvania (Late Cretaceous – Paleogene)

Izabela Maris and Nicolae Anastasiu

Bucharest University, Romania (izabela@contentlogic.ro; nicanastasiu@gmail.com)

In the SW corner, the Transylvanian Basin advances like digitate embayments towards the adjacent mountains (Apuseni Mts in the west and South Carpathians in the south). Among the various sedimentary formations exposed in this region, the Upper Cretaceous to Lower Tertiary successions that are cropping out in Alba Iulia-Sebeş area are of special interest, marking the sedimentary environments evolution near the K/T boundary (Codrea & Dicea, 2005). At this level reddish continental formation was deposited

The reddish continental formation is typical of fluvial deposition system (braided rivers) characterized by numerous internal bars where coarse sediments are stored temporally. In composition of this formation can be distinguished ten facieses: six rudites facies (ortho and para conglomerates polimictics), three arenites facieses (fine to medium arenites) and a siltic facies (red paleosoils). Arenites and rudites facieses filling the channel. The reddish silts, with pedogenetics levels and plants traces representing overbank deposits.

Based on whole-rock geochemistry of fine fraction using micro XRF technique and on XRD mineralogy of mudstones was possible to identify the tropical paleoclimate type, by alternating of wet - dry periods.

Mineralogical analysis by XRD made possible the separations in two classes of paleosoils: calcisoils and vertisoils. The clay minerals identified in paleosoils levels are closely related to the alteration processes of the polimictic pebbles contained in subjacent conglomerates.

Grain-size analysis of paleosol sequences showing a decrease of pedogenetic intensity upward and more preservation of the detrital material unaltered.

Faunal association is similar to Cretaceous fauna from Hateg Basin which may lead to a potential correlation of clastic deposits from both sedimentary basins Transilvanian Basin and Hateg Basin (Codrea & Dicea, 2005; Csiki & Benton, 2010).