A composite biostratigraphy (mainly calpionellids and foraminifera) of the Upper Jurassic–Lower Cretaceous Carbonates in Sivrihisar region (Pontides, NW Turkey): Delineation of the J-K boundary in a slope environment

***Atasoy, S.G.*[1,*] *and Altiner, D.*[1]**

*1) Middle East Technical University, Ankara, Turkey, *E-mail: sgatasoy@gmail.com*

A 748 m thick stratigraphical section was measured along the Upper Jurassic – Lower Cretaceous carbonate sequence exposed in a tectonic klippe of the Sakarya Zone (Pontides), north of Sivrihisar. According to the biozonation and microfacies types, two coeval but dissimiliar rock successions, separated by a thrust fault, have been detected. The lower succession displays a slope to basin facies and consists of the Kimmeridgian–Berriasian Yosunlukbayırı Formation and the overlying Valanginian Soğukçam Limestone. The deposits of this succession are characterized by the continuous pelagic background sedimentation with taxa including calpionelldis, *Saccocoma*, calcareous dinocysts and aptychi, intercalated with the calciturbidites containing platform derived clasts (benthic foraminifera, microencrusters, worm tubes etc.). The succession commences with pelagic deposits characterized by toe-of-slope type facies. There is an important increase in the amount of platform-derived clasts in the Tithonian, reflecting a calciturbiditic – slope type deposition in the succession. Latest Tithonian onward the background pelagic conditions dominate the deposition.

This facies evolution resulted in intervals dominated by neritic or pelagic taxa or characterized by mixed fauna. This types of bio-association gave rise to a composite biozonation that is based on both pelagic and benthic taxa, providing the link between slope and platform successions. This biozonation consists of the following biozones: *Globuligerina oxfordiana–Mohlerina basiliensis* Zone (Kimmeridgian), *Saccocoma* Zone (Lower Tithonian), *Protopeneroplis ultragranulata* Zone (Upper Tithonian), *Crassicollaria* (*massutiana* subzone) Zone (uppermost Tithonian), *Calpionella* (*alpina*, *Remaniella*, *elliptica* subzones) Zone (Lower Berriasian), *Calpionellopsis* (*simplex*, *oblonga* subzones) Zone (Upper Berriasian) and *Calpionellites* (*darderi* subzone) Zone (Lower Valanginian). Calciturbiditic deposits of the *P. ultragranulata* Zone are followed by pelagic deposits of the *massutiana* subzone in the latest Tithonian. The Jurassic-Cretaceous boundary is located at the base of the overlying *alpina* subzone defined by the acme of *Calpionella alpina*. The other observed calpionellid bioevents around the J-K boundary are the stepwise last occurences of *Crassicollaria intermedia* (below the boundary), *Calpionella elliptalpina* (at the boundary) and *Crassicollaria brevis* (at the boundary) and the marked decrease in the abundance of *Calpionella grandalpina* across the Tithonian-Berriasian boundary.