

## A Reference Section of Late Lutetian to Bartonian from the Northern Peri-Tethys (Bakhchisaray, SW Crimea): Biostratigraphy and Environmental Dynamics

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The Late Lutetian (Keresta F.) and Bartonian (Kuma Fm) in Bakhchisaray area (SW Crimea) are represented by a sequence of about 90 m of marls which accumulated on the outer shelf and upper slope. The white marls of the upper part of Keresta Fm. belong to Zone CP13b and to the base of Zone CP13c. The brown marls of Kuma Fm., enriched in organic carbon (up to 8% in lower part of the formation), were deposited mainly in a dysoxic environment during Zones CP14a, CP14b and lowermost CP15a. Quantitative analysis of nannofossil assemblages (*Discoaster*+ / *Sphenolithus*/*Chismolithus*+*Reticulofenestra* ratio) from 110 levels shows that sea-surface water temperatures during Keresta time were relatively high, while during the deposition of Kuma Fm. a strong cooling occurred. At the transition from brown marls of the topmost Kuma Fm. to the green marls of Belaya Glina Fm. (basal age: uppermost CP 15a) surface water temperature increased, coinciding with an improved oxygenation of bottom waters. This conclusion is supported by analysis of planktonic foraminiferal assemblages. In Zones CP13b and base of Zone CP14a of the Keresta Fm. and lowermost Kuma Fm. warm-water planktonic foraminiferal species like *Hantkenina* and *Globigerinatheka* became relatively abundant at several levels. During most of the Kuma time planktonic assemblages were impoverished with a dominance of *Subbotina* and *Pseudohastigerina* and at some levels of biserial and triserial heterochelids. The assemblages of the terminal Kuma and basal Belaya Glina Fms. again contain *Globigerinatheka*. In organic rich intervals of Kuma Fm. benthic foraminifera contribute commonly less than 10% to the total foraminiferal assemblage or they are absent at all. Species diversity is low. Most important taxa are bolivinids contributing over 80% to the assemblages. The oxygen index (as inferred from benthic foraminiferal assemblages) ranges between 40 and 50, which we take as an indication that bottom water was badly oxygenated at least in the middle part of Kuma Fm. Sediment accumulation rates were rather low. A relative sea-level fall and fresh-waters flux events are documented from the Northern Peri-Tethys during this time interval. Furthermore the cold surface-water intervals identified at Kuma Fm. are coeval to a significant drop of sea surface water temperatures reported from the Atlantic Ocean.