



Late Jurassic – Early Cretaceous sections from Tata (Pelso Unit, Hungary): sedimentology, marine palaeontology, palaeoenvironment

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There is a well known Late Jurassic-Early Cretaceous sequence of the Transdanubian Range of the Pelso Unit in Kálvária-domb, Tata, N-Hungary. Although detailed macro- and microfacies investigation was carried out and the age was determined by calpionellid zones formerly foraminifers were studied only subordinately. A few references about Tithonian-Berriasian foraminifera of the Tethys region and the absence of studies on isolated specimens justify the necessity of these investigations.

The outcrops of the light grey-lilac red limestone are the type locality of the Szentivánhegy Limestone Formation which is capped by erosional surface and overlain by Aptian sandy, crinoidal limestone. This paper deals with the investigation of microfauna (especially foraminifera) and the sedimentological study of two geological sections of this site.

The thickness of the formation is 1-1.5 m because of its condensed character. This feature made it necessary to collect samples in every 10 of cm. The research was based fundamentally on thin section investigation. The samples were dissolved in concentrated acetic acid to get isolated forms. To get more precise identification of foraminifera thin sections were made from specimens.

There were benthic and planktonic foraminifers in the observed fauna with the dominance of benthic ones. The calcareous forms significantly prevail over agglutinated ones in both sections. The cause of the diverse fauna probably is the condensed feature of the formation. The diversity and the quantity of foraminifera increase from the

lower to the upper part of the succession. The components of the isolated foraminifera association are *Ammodiscus*, *Spirillina*, *Conicospirillina*, *Radiospirillina*, *Trocholina*, *Frondicularia*, *Lingulina*, *Dentalina*, *Nodosaria*, *Pseudonodosaria*, *Lenticulina*, *Astacolus*, *Lagena*, *Eoguttulina*, *Paalzowella*. In addition to this benthic fauna early planktonic forms appear. Spirillinids have predominance among benthic forms. This is the first time that *Radiospirillina* genus can be identified in the upper (Berriasian) strata and it was possible to gain a three dimensional picture of this genus with acetic acid treatment.

The micro- (planktonic foraminifers, radiolarians, calpionellids) and the macrofauna (ammonites, belemnites) suggest an off-shore pelagic sedimentary environment. The frequency of *Spirillina* and *Trocholina*, the high amount of echinoderm fragments and the large-scale appearance of embryonic bivalves in some strata prove transportation of sediments from a shallow region. These results outline a slope of a basin environment with dividing submarine ridges where the pelagic sedimentation was interrupted by occasional input of sediments from the uplifted areas. This palaeoenvironmental sketch is familiar with other territories of the Transdanubian Range in the Jurassic. In conclusion, there was a (similar) submarine ridge in Tata's area until the Early Cretaceous which caused significant relief influencing the sedimentation. The Kálvária-domb facies of Szentivánhegy Limestone Formation was deposited in this sedimentary environment.

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