

## PALYNOLOGY OF THE TRIASSIC – JURASSIC TRANSITION IN THE TIEFENBACHGRABEN SECTION – NORTHERN CALCAREOUS ALPS

Nina BONIS<sup>1</sup>, Wolfram M. KÜRSCHNER<sup>1</sup> & Leopold KRYSTYN<sup>2</sup>

<sup>1</sup> Palaeo-Ecology, Laboratory of Palaeobotany and Palynology, Utrecht University, Budapestlaan 4, 3584 CD Utrecht, NL

<sup>2</sup> Department of Palaeontology, Geozentrum, University of Vienna, Althanstr. 14, A 1090 Vienna, Austria

The end of the Triassic is characterized by biotic turnovers in both the marine and terrestrial realm. The palynological record during the Triassic-Jurassic transition, however, is quite controversial as palynological data from North America (Newark basin) suggested a major extinction followed by a spore spike whereas European data, so far gathered, do not show such patterns. We present the results of a palynological study of the Tiefenbach section, which is located in the Northern Calcareous Alps in the Salzkammergut. 30 samples have been analysed from the Pre-planorbis beds and the lower part of the Grauer Lias Basiskalk and a miospore zonation has been established. Pollen and spore assemblages show distinct changes throughout the section studied. Palynomorph assemblages from the lower part are dominated by the *Corollina*, *Ricciisporites* and *Vitreisporites*. A distinct decline of *C. torosus* and *Vitreisporites* and a concomitant increase of spores (*Calamospora*, *Deltoispora*, *Concavisporites*, *Convolutispora*) 3m above the base of the Pre-planorbis beds. The most striking feature of at this level is the sudden increase in fungal remains. Then, *Heliosporites* becomes increasingly abundant while *Corollina* frequencies increase again. *Trachysporites* and bisaccate pollen (*Pinuspollenites*) become abundant in the uppermost part of the section studied while *Ovalipollis* disappears. Whereas marine palynomorphs are abundant in the lowermost part of the pre-planorbis beds, they are virtually absent in the middle part. A distinct increase of dinoflagellate cysts and acritarchs indicate a transgression at the base of the Grauer Lias Basiskalk. The palynological T-J boundary may be drawn 6m above the base of the Pre-planorbis beds.

In terms of vegetation history, the distinct decline of *Corollina* and *Vitreisporites* indicate the destruction of a significant part of the woody vegetation (conifers and seedferns = Cheirolepidaceae and Caytoniales). Increasing spore abundance, such as *Heliosporites* and *Porcellispora* indicate the proliferation of pioneer vegetation consisting of club moss and liverworts. The increase of *Corollina* and *Pinuspollenites* abundance indicate the re-establishment of the arborescent vegetation. The observed pattern is similar to that of the vegetation succession reported from the End Permian crisis.