Paleoenvironmental changes in the Karpatian of the Korneuburg Basin inferred from foraminiferal assemblages

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The construction of the S1 at Stetten (Lower Austria) gave a unique opportunity to study an approximately 2.5 km long east-west transect within the Korneuburg Basin. Seven profiles have been recorded and 170 samples were investigated for foraminiferal assemblages along with ongoing studies on molluscs and ostracods. With this huge amount of data, a detailed reconstruction is possible for the southern part of the basin for the first time. Not only the environmental settings, but also morphometric data, such as rapid changes in size or morphology (aberrant chambers) were taken into consideration. These down-sizing characteristics and deformations are likely an indication for a stressed environment.

In the lower Miocene the Korneuburg Basin was cut off from the open waters of the Parathetys and characterized by a northern portion with predominantly marine and a southern portion with predominantly estuarine conditions (HARZHAUSER & WESSELY 2003).

However, fully marine faunas have settled temporarily in the southern part during short-termed marine ingressions. LATAL et al. (2006) interpreted the isotopic differences in gastropod shells between the marine and estuarine assemblages as caused by changes of ambient water salinity rather than by temperature.

Sea-surface temperatures are estimated to range annually from 13 to 26 °C. This is confirmed by the data provided by the analysis of foraminiferal assemblages as well as by earlier results from gastropd samples (LATAL et al. 2006).

The diversity of foraminiferal assemblages from the Stetten area follows the pattern of previous studies. The benthic and planktic foraminifera are generally well preserved, abundant and diverse. About 60 benthic and 10 planktic species are present in sediments from the Stetten S1 transect. Two main groups of assemblages were identified statistically. One is dominated by the genus *Ammonia* (up to 90 %), which indicates very shallow water and might be considered as an indicator for tidal flats or lagoons. Another, more diverse group contains planktic genera, such as *Cassigerinella* and *Globigerina*, and is associated with „deeper" water benthic foraminifera. Some samples are rich in species frequently attributed to increased organic flux or ambient low oxygen content (e.g., *Bulimina elongata*, *Bolivina* spp., *Praeglobobulimina pupoides).*

A marine to estuarine environment with changing water depths, salinities, and food supply with constantly high (subtropical) temperatures can be assumed for the southern part of the Korneuburg Basin.

HARZHAUSER, M. & WESSELY, G. (2003): The Karpatian of the Korneuburg Basin (Lower Autria) - (In: BRZOBOHATY, R., CICHA, I., KOVAC, M. & RÖGL, F. (Eds.): The Karpatian: A Lower Miocene Stage of the Central Paratethys). - 107-109, (Masaryk University).

LATAL, C., PILLER, W. & HARZHAUSER, M. (2006): Small-scaled environmental changes: indications from stable isotopes of gastropods (Early Miocene, Korneuburg Basin, Austria). - Int. J. Earth Sci. (Geol Rundsch), **95**: 95-106.

Palaeobiogeographical provenances of dasycladalean algae of the Plassen Carbonate Platform within the Late Jurassic-Earliest Cretaceous platform-basin-system (Northern Calcareous Alps, Austria)

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In the Northern Calcareous Alps of Austria/Germany shallow-water carbonates were reported from the Plassen Carbonate Platform sensu lato, with duration of Late Oxfordian/Kimmeridgian to Berriasian. Most occurrences of the Plassen Carbonate Platform are preserved in the central Northern Calcareous Alps.

The Plassen Carbonate Platform sensu lato developed on top of the advancing and rising nappes and prograded towards the older trench-like basin fills in a shallowing-upward cycle in a continuously convergent regime with decreasing tectonic activity. The biostratigraphic dating of these platform carbonates (e.g., with dasycladales, benthic foraminifera, microproblematica and others) and their sedimentary base, their installation, evolution and disappearing are key elements to unravel an enigmatic period of the western Neotethys evolution and to get a better general understanding of the elimination of a shallow-water carbonate platform (drowning/demise, subsequent erosion and redeposition in contemporaneously formed basins) in an active tectonic regime. The tectonic regime of the Northern Calcareous Alps during growth of the Plassen Carbonate Platform sensu lato was characterized by ophiolitic emplacements, crustal stacking, and extensional tectonics and/or strike-slip movements.

Today, the Plassen Carbonate Platform sensu lato is divided into three independent carbonate platforms with radiolarite deep-water basins between: the Wolfgangsee Carbonate Platform to the north, the Plassen Carbonate Platform sensu stricto in a central position and the Lärchberg Carbonate Platform to the south. The differences in the litho-stratigraphic and overall geodynamic evolution of the three platforms account for the exemplified peculiarities in their dasycladalean algal inventories. In many cases, it allows the assignment of resediments in basinal series to a certain platform as a helpful palaeobiogeographical tool when other data are lacking.

Shedding from these platforms generally took place towards northern directions: Sillenkopf Formation with