

findlichen, in ein Evaluierung hinsichtlich des geothermalen Potentials ist eine Herausforderung für die Zukunft.

Facies and lithostratigraphic anatomy of a Central Paratethys temperate carbonate platform (Leitha Mountains, Badenian, Austria)

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The Leitha Limestone is a widespread carbonate unit of Middle Miocene age in the Pannonian Basin System. Especially the Leitha Mts. represent a small isolated carbonate platform of Langhian to Early Serravallian age (=Badenian). This platform attains a size of c. 30 km length (NNE-SSW) and 6 km width. Seismic surveys document a potential thickness of more than 200 m for the entire carbonate succession, which consists pre-dominantly of corallinean limestones. It comprises a variety of facies, characterized by different organism groups (e.g., corallineans, corals, molluscs, echinoderms and brachiopods) which reflect variable environmental conditions. Carbonate production itself is very sensitive to small environmental changes in basic parameters like climate, temperature, nutrients and water energy; especially in very shallow marine environments, marginal changes in water depth induce large displacements of facies zones. In the Central Paratethys Sea coral reefs s.s. seem to be limited to the Styrian Basin while for example in the Vienna Basin only coral carpets occur. Nevertheless, coral-bearing limestones are widespread along basin margins and platforms during the Mid-Miocene Climate Optimum (MMCO) extending northwards into the Carpathian Foredeep. With the onset of the Miocene Climate Transition (MCT), the paleogeographic extension of these bioconstructions became strongly limited and their northernmost occurrences remained in the area of the Pannonian Basin complex. Aside from the cooling, coral growth might have been negatively affected during the MCT by increased terrigenous discharge from the Alps due to more humid conditions. Coeval coral bioconstructions were therefore represented only by coral carpets and small patch reefs, restricted to isolated platforms. In the Leitha Mts. the interval from the MMCO to the MCT can be studied based on new nannoplankton data. These new findings allow a re-evaluation of the mollusc-, echinoid- and coral assemblages as well as the overall carbonate facies in terms of regional environmental shifts and global climate change.

Lithostratigraphy and facies of a Middle Badenian limestone succession in the Mannersdorf quarries (Austria, Central Paratethys)

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The Middle Miocene Vienna Basin is characterized by the development of small carbonate platforms along the basin margins and on tectonic highs. These comprise corallinean limestones with rare and local coral patches or carpets. The successions within the platforms are expected to provide insight into paleoenvironmental and climatic changes, because they were more sensitive to regional factors like increased sediment or freshwater influx than open marine areas. In this study we want to characterize the north-eastern part of the Leitha Mountains carbonate platform with c. 80-m-thick continuous corallinean limestone successions covering a Central Alpine Permian-Mesozoic core. The studied outcrops are close to the village Mannersdorf in Lower Austria. The faunal elements (e.g., *Porites*, *Tarbellastraea*, *Isognomon* and *Pholadomya*) indicate an Early/Middle Badenian (Early/Late Langhian) age for the limestones. The exposed sedimentary succession shows two transgressive-regressive (T-R) sequences and one transgressive phase. The first T-R sequence starts with basal conglomerates grading into poorly sorted gravel and coarse sand with a first intercalation of a corallinean limestone bed. Upsection, this marine phase is terminated by progradation of fluvial gravel. The second T-R sequence starts with the development of marly corallinean limestones, containing a shallow marine fauna including *in situ* *Pholadomya*. Upsection, deeper marine rhodolite carpets are developed which are replaced by marly limestones with *in situ* *Pinna* indicating seagrass facies. Seagrasses grow in the well illuminated intertidal and subtidal zone. In the present-day Mediterranean Sea, *Pinna* is found down to 10 m in association with seagrasses. The third transgression is represented by development of marl sand flats which in the recent are mostly found in water depth of about 40 m.

In-situ trace element and ID-TIMS Sm-Nd analysis of scheelite and Re-Os dating of molybdenite at Schellgaden, a Au-(W) deposit in the Eastern Alps, Austria

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