

material geborgen, darunter Fauna- und Holzreste, Steinartefakte und Farbstoffe, die die Umweltnutzung durch den damaligen Menschen zeigen.

Probenserien für sedimentologische, paläobotanische und malakologische Untersuchungen wurden aus den Ausgrabungsprofilen genommen. Mikromorphologische Studien und Analysen des Paläomagnetismus, der magnetischen Suszeptibilität sowie verschiedene Verfahren der Lumineszenzdatierung (LOMAX et al. this volume) ergänzen diese Beprobungsstrategie. Ziel ist eine umfassende Beurteilung der Fundstellengenese, wie auch die chronologische und klimatische Einordnung der Station in die jungpleistozäne Umweltentwicklung.

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A high-resolution dinoflagellate cyst record from Late Miocene (Pannonian) sediments in Mataschen, Austria

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A dinoflagellate cyst record is studied for the early Late Miocene (early Pannonian) of the clay-pit Mataschen, Styrian Basin, Austria. The succession of the clay-pit Mataschen (ca. 30 m thick) comprises finely laminated silts and fine sands of the Feldbach Formation. The sediments were deposited in fluvial-limnic to brackish

waters and are rich in plant and vertebrate remains and molluscs such as the dreissenid bivalve *Mytilopsis ornithopsis* (GROSS et al. 2007). In this study, dinoflagellate cysts, phytoplankton living in the surface waters, and pollen have been analyzed from a composite core (100 cm long) at a 1-cm-sample resolution. Dinoflagellate cysts were recovered from all samples and the spectrum demonstrates that the level of cyst recovery is generally low in the lower part of the core and high (more than 29000 cysts per gram of sediment) in its upper part.

A rather low diversity of dinoflagellates has been encountered. Typical are endemic morphotypes of *Spiniferites/Achomosphaera* and *Impagidinium*. In addition, the assemblage is characterized by the occurrence of *Selenopemphix*, *Pyxidinospis*, *Polykrikos*, *Protoperidinium*, *Mendicodinium* and the acritarch genus *Nannobarbophora*. The data derived from the dinoflagellates indicate quasi-periodic changes in the nutrient availability and other environmental parameters such as temperature and salinity. The heterotrophic taxa, *Selenopemphix* and „small round brown cysts“, dominate all samples which indicate high-levels of nutrient content in the surface-waters. Additionally, prominent peaks in the H/A ratio roughly occur every 13-16 cm. Based on the proposed age model, such fluctuations happened every 160-210 year. No large scale changes in lake level are indicated since no significant variation in *Impagidinium* abundance occurs except in the upper part of the core where an increase in lake-level could be expected. Small-scaled oscillations, however, are clearly documented in the pollen record. The considerable occurrence of *Pyxidinospis psilata* and cysts of *Polykrikos* in the lower part of the core and their scarceness upsection, suggests that freshwater influx decreased upwards the core. Warm climatic conditions prevailed during the deposition of the studied samples indicated by the dominance of the *Selenopemphix nephroides*, and the warm-water acritarch genus *Nannobarbophora*.

This study of the dinoflagellate cysts is a part of a larger project aimed at understanding the relationship between vegetation, climate and water productivity of Lake Pannon. This study is financially supported by FWF-project no. P 21414-B16 and P 21748-N21.

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Miocene dinoflagellate cyst zonation for the Western Central Paratethys

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A dinocyst zonation for the Upper Oligocene-Miocene successions in the Molasse, Vienna and Styrian basins