

Upper Badenian Dinoflagellate Cysts of Bad Deutsch Altenburg, Vienna Basin, Austria

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A dense array of fully cored boreholes was drilled in the area of Bad Deutsch Altenburg (Lower Austria). The recovered cores revealed Middle Miocene sediments of a mixed carbonate-siliciclastic regime, which transgressively overlie a basement of Mesozoic dolomites. The Miocene successions contain a variety of facies of a generally transgressive development. Palynological analysis of 87 samples out of 10 boreholes (down to 100m below surface) has revealed a diversity of dinoflagellate cysts, acritarchs, prasinophytes, foraminiferal test linings, embryophyte spores and pollen, and fungal spores.

Dinoflagellate cysts, in particular, have been studied in detail, including identification to the species level and relative quantification. The results represent the first systematic treatment of Upper Badenian (Middle Miocene) dinoflagellates from the Vienna Basin. Some stratigraphic marker taxa of dinoflagellate cysts, as *Unipontidinium aquaeductum*, *Labyrinthodinium truncatum* and *Operculodinium? borgerholtense*, are consistent with a Middle Miocene age based on foraminifers, which indicate planktonic foraminiferal zone M7. The dinoflagellate assemblages reflect a shallow water environment with an open marine influence for some intervals. Some horizons show increased influence of freshwater which leads to a high abundance of protoperidiniacean taxa as *Selenopemphix* and a dominance of reworked Cretaceous and Eocene species in some boreholes, especially in the NW part. Subtropical to tropical climate conditions can be deduced from the presence of some thermophilic species as *Tectatodinium pellitum*, *Melitasphaeridium choanophorum* and *Tuberculodinium vancampoeae*.

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