

ser interdisziplinären Zusammenarbeit zu gewinnen. Nur so können neue gemeinsame Fragestellungen entwickelt werden, die die Kompetenzen der jeweiligen Disziplinen essentiell erweitern und zu neuen Erkenntnissen führen.

Dinoflagellate bioevents at the Cretaceous/Paleogene boundary in the Gosau basin of Gams, Northern Calcareous Alps, Austria

OMAR, M.^{1,2} & PILLER, W.E.¹

¹ University of Graz, Institute of Earth Sciences (Geology and Palaeontology), Heinrichstrasse 26, 8010 Graz, Austria; omaraosman@yahoo.com; werner.piller@uni-graz.at;
² El-Minia University, Faculty of Science, Geology Department, El-Minia, Egypt

For the first time, an integrated palynological investigation was carried out across the Cretaceous/Paleogene (K/Pg) boundary in two sections (Knappengraben and Gamsbach sections) from the Gosau Basin of Gams in the Northern Calcareous Alps, Austria.

More than 180 dinoflagellate species and subspecies were identified from 89 rock samples concentrated around the K/Pg boundary. In most samples the dinocysts are moderately to well preserved but associated with reworked material. In both sections *Manumiella druggii*, *Trabeculidium quinquetrum*, *Cyclonephelium compactum* and *Dinogymnium acuminatum* are restricted to the Upper Maastrichtian. *Cordosphaeridium fibrospinosum*, *Palynodinium grallator*, *Membranilarnacia? tenella*, *Spongodinium delitiense* and *Lejeunecysta izerzenensis* reach from the Upper Maastrichtian to the Lower Danian. *Carpatella cornuta*, *Damassadinium californicum*, *Senoniasphaera inornata*, *Trithyrodinium evittii*, *Batiacasphaera rifensis* and *Impagidinium maghribensis* are only Danian taxa. The first and last occurrences of these taxa are correlated with the nannoplankton biozones (EGGER et al. 2004, 2009) and with other dinocyst bioevents around the K/Pg boundary in the Northern and Southern hemispheres (WILLIAMS et al. 2004, BRINKHUIS et al. 1998). The *Spongodinium delitiense* acme Zone is recorded in both studied sections (from 90-180 cm in Gamsbach section and from 100-220 cm in Knappengraben section above the K/Pg-boundary).

BRINKHUIS, H., BUJAK, J.P., VERSTEEGH, G.J.M. & VISSCHER, H. (1998): Dinoflagellate-based sea surface temperature reconstructions across the Cretaceous-Tertiary boundary. - Palaeogeography, Palaeoclimatology, Palaeoecology, **141**: 67-83.

EGGER, H., KOEBERL, C., WAGREICH, M. & STRADNER, H. (2009): The Cretaceous-Paleogene (K/Pg) boundary at Gams, Austria: Nannoplankton stratigraphy and geochemistry of a bathyal northwestern Tethyan setting. - Stratigraphy, **6**(4): 333-347.

EGGER, H., RÖGL, F. & WAGREICH, M. (2004): Biostratigraphy and facies of Paleogene deep-water deposits at Gams (Gosau Group, Austria). - Annalen des Naturhistorischen Museums Wien, **106A**: 281-307.

WILLIAMS, G.L., BRINKHUIS, H., PEARCE, M.A., FENSOME, R.A. & WEEGINK, J.W. (2004): Southern Ocean and global dinoflagellate cyst events compared: index events for the late Cretaceous-

Neogene. - Proceedings of the Ocean Drilling Program, Scientific Results, **189**: 1-98.

Cretaceous/Paleogene dinoflagellate bioevents in the K/Pg-boundary section of Waidach (Helvetikum), Salzburg, Austria

OMAR, M.^{1,2}, PILLER, W.E.¹ & EGGER, H.³

¹ University of Graz, Institute of Earth Sciences (Geology and Palaeontology), Heinrichstrasse 26, 8010 Graz, Austria; omaraosman@yahoo.com; werner.piller@uni-graz.at;
² El-Minia University, Faculty of Science, Geology Department, El-Minia, Egypt;
³ Geological Survey of Austria, Neulinggasse 38, 1030 Vienna, Austria; hans.egger@geologie.ac.at

Very high abundance dinocyst samples have been studied from the Cretaceous/Paleogene (K/Pg) boundary interval of the Helvetic Zone north of Salzburg, Austria. A total of 163 dinocyst species and subspecies out of 62 genera have been identified. Biostratigraphically, the K/Pg transition in Waidach section comprises the upper part of the Cretaceous *Nephrolithus frequens* Zone (CC26) and the lower part of the Paleocene *Markalius inversus* Zone (NP1). However, a change in the dinoflagellate assemblages has been observed at the K/Pg boundary, suggesting a disconformity between the Maastrichtian and Danian.

Dinogymnium acuminatum, *Eisenackia circumtabulata* and *Lejeunecysta izerzenensis* are restricted to the Upper Maastrichtian. *Manumiella druggii*, *Manumiella seelandica*, *Trithyrodinium evittii*, *Disphaerogena carpasphaeropsis*, *Cordosphaeridium fibrospinosum*, *Palynodinium grallator*, *Spongodinium delitiense*, *Batiacasphaera rifensis* and *Kenleyia leptocerata* extend from the Upper Maastrichtian to Lower Danian. *Carpatella cornuta*, *Damassadinium californicum* and *Senoniasphaera inornata* are exclusively Danian taxa. *Trithyrodinium evittii* is recorded with high frequency in most Maastrichtian and Danian samples. Two *Manumiella* spikes have been recorded in the Upper Maastrichtian (~1 m and 10 m below the K/Pg boundary). An acme of *Spongodinium delitiense* is recorded in the Lower Danian (1 m above the K/Pg boundary).

Tectonic correction of secondary magnetizations (SM): record of incremental strain in a fold

ORTNER, H.¹, THÖNY, W.², GRUBER, A.³ & SCHOLGER, R.⁴

¹ Institut für Geologie und Paläontologie, Universität Innsbruck, Innrain 52, A-6020 Innsbruck;

² OMV Exploration & Produktion GmbH, Trabrennstrasse 6-8, A-1020 Wien;

³ Geologische Bundesanstalt, Neulinggasse 38, A-1030 Wien;

⁴ Paläomagnetiklabor Gams, Lehrstuhl für Geophysik, MU Leoben, Gams 45, A-8130 Frohnleiten

In polydeformed thrust belts such as the Northern Calcareous Alps, pervasive remagnetization erased most