

## Palynological investigation of the Cenomanian–Turonian boundary section in the Ultrahelvetic Zone, Eastern Alps, Austria

Polina PAVLISHINA<sup>1</sup> & Michael WAGREICH<sup>2</sup>

<sup>1</sup>Department of Geology and Palaeontology, Sofia University 'St. Kliment Ohridski', Tzar Osvoboditel Str. 15, 1504 Sofia, Bulgaria; <sup>2</sup>Department of Geodynamics and Sedimentology, Center for Earth Sciences, University of Vienna, A – 1090, Vienna, Austria; polina@gea.uni-sofia.bg

The biostratigraphy of the Cenomanian–Turonian boundary interval in the Rehkogelgraben section, Ultrahelvetic unit, Austria, is defined mainly based on calcareous nannofossils with additional information from planktonic foraminifera (Wagreich et al., 2008). Correlations to Oceanic Anoxic Event 2 are possible via the occurrence of black shales (Wagreich et al., 2008).

This contribution concentrates on the palynological assemblages and the palynofacies associated with the Cenomanian–Turonian interval. Four samples from this section have yielded some low diversity but distinctive palynological associations which have both stratigraphic and palaeoenvironmental significance. The sporomorph association is dominated by representatives of the Normapolles group. Most profuse species are *Atlantopollis microreticulatus* and *Atlantopollis reticulatus* together with *Complexiopollis praeatumescentes* and *Complexiopollis christae*. The concurrent presence of these pollen species is regarded as characteristic in previously reported latest Cenomanian and especially Early Turonian assemblages from Southern France, Portugal and Bulgaria (Medus et al., 1980; Robaszynski et al., 1982; Pavlishina & Minev, 1996). Their calibration to the nannofossil and planktonic foraminiferal successions in the Rehkogelgraben section is of biostratigraphical importance. A low diversity dinocyst association is identified in the Cenomanian – Turonian boundary interval samples. It is dominated by the *Cyclonephelium compactum* – *Cyclonephelium membraniphorum* complex and *Circulodinium* species. The dinocyst association is encountered in palynofacies rich in organic matter of granular amorphous composition considered to be characteristic for deposition in restricted, anoxic conditions. The palaeoenvironmental significance of the low diversity *Cyclonephelium/Eurydinium* association in preparations dominated by granular amorphous organic matter was outlined by Marshall and Batten (1988) for the Cenomanian–Turonian black shale sequences of Northern Europe and gives ground for correlations with the studied section.

- Marshall, K. & Batten, D. J. (1988): Dinoflagellate cyst associations in Cenomanian – Turonian "black shale" sequences of Northern Europe. *Rev. Palaeobot.Palynol.*, 54, 85 – 103.
- Medus, J., Boch, A., Parron, C., Lauerjat, J., Triat, J.M. (1980): Turonian Normapolles from Portugal and Southern France. *Correlations. Rev. Palaeobot.Palynol.*, 31, 105 – 153.
- Pavlishina, P. & Minev, V. (1996): Turonian and Coniacian Normapolles from Southwest and Northeast Bulgaria and their calibration against the standart ammonite zones. *Zbl. Geol. Palaeont.*, H 11/12, 1217 – 1223.
- Robaszynski, F., Alcayde, G., Amedro, F., Badillet, G., Damotte, R., Foucher, J-C., Jardine, S., Legoux, O., Manivit, H., Monciardini, C., Sornay, G. (1982): Le Turonian de la region – type: Saumurois et Touraine. *Stratigraphie, biozonations, sedimentologie. Bull. Centr. Rech. Explor. Prod. Elf – Aquitaine*, 6 (1), 119 – 225.
- Wagreich, M., Bojar, A.V., Sachsenhofer, R., Neuhuber, S., Egger, H. (2008): Calcareous nannoplankton, planktonic foraminiferal and carbonate carbon isotope stratigraphy of the Cenomanian–Turonian boundary section in the Ultrahelvetic Zone (Eastern Alps, Upper Austria). *Cretaceous Research*, 29, 965 – 975.

# ZOBODAT - [www.zobodat.at](http://www.zobodat.at)

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Berichte der Geologischen Bundesanstalt](#)

Jahr/Year: 2009

Band/Volume: [78](#)

Autor(en)/Author(s): Pavlishina Polina, Wagreeich Michael

Artikel/Article: [Palynological investigation of the Cenomanian-Turonian boundary section in the Ultrahelvetic Zone, Eastern Alps, Austria 33](#)