

STOP 3 Paleocene-Eocene boundary interval in tributary of Gamsbach

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Topic: Sedimentology, stratigraphy and isotope geochemistry of Paleocene-Eocene boundary interval

Lithostratigraphic unit: Zwieselalm Formation (Upper Gosau Subgroup)

Age: Thanetian (NP9-NP10) – Ypresian (NP10a,b,)

Tectonic unit: Unterberg nappe / Göller nappe (Tirolicum), NCA

Location: Outcrops along a southern tributary creek of Krautgraben (=upper Gamsbach), S of farm house Sommerauer

Coordinates: 014° 50' 25" E, 47° 39' 40" N

Specialities: high-frequency turbidites through an extended Paleocene-Eocene boundary interval

References: Egger et al. (2004, and submitted)

The Paleogene record in the studied Gams sections is not continuous but punctuated by stratigraphic gaps which comprise zone NP3 and parts of zones NP6 to NP8 (Fig. 8). The Danian deposits are characterized by a predominance of red and grey pelagic to hemipelagic marlstones and marly limestones with thin turbidites. The Selandian to lowermost Ypresian deposits exposed in the tributary creel of the Gamsnach S of Sommerauer are characterized by siliciclastic turbidites with sandstone to pelite ratios between 1:1 and 5:1. The turbidites, especially thin layers, display only weak cementation due to a very low carbonate content. Turbiditic shales are dark grey, mainly only a few centimeters thick, and largely devoid of carbonate.

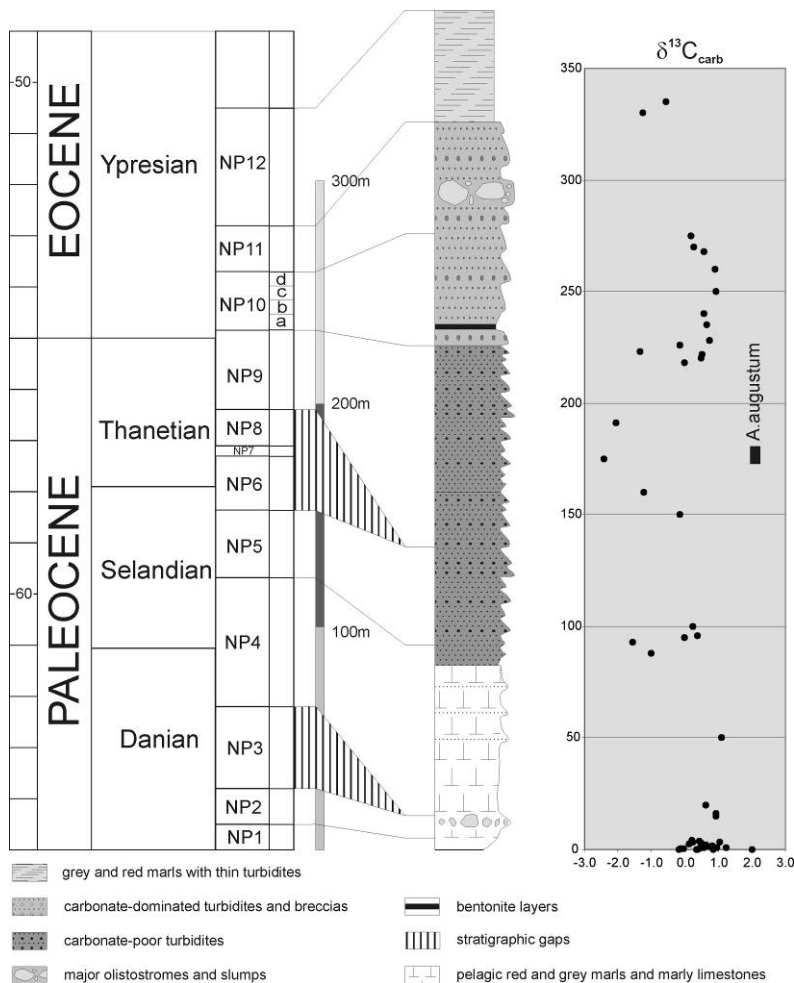


Fig. 8. Paleogene section and Paleocene/Eocene boundary interval at Gamsbach tributary.

The basal Eocene has been recognized in a ca. 100 m thick succession of thin-bedded turbidites and alternating hemipelagic claystone and marly claystone. Occasionally, thin layers and concretions occur consisting essentially of early diagenetic siderite. The succession is characterized by a negative excursion of carbon isotope values, the occurrence of the dinoflagellate species *Apectodinium augustum* and the first occurrence of the calcareous nannoplankton genus *Rhomboaster*.

The largely carbonate-free turbiditic succession of the Paleocene/Eocene-transition grades into a succession dominated by carbonate turbidites (NP10 to NP11). Within the lower part of this succession (sub-zone NP10a) four 3 to 9 cm thick montmorillonite layers were discovered, which are interpreted as volcanic ashes. Similar layers have been found in other Austrian sections and were correlated with ashes of the Fur Formation in northern Denmark. The wide dispersal distance of the tephras implies Plinian scale eruptions and multiple ejections of large volumes of pyroclastic material.