

## Planktonic foraminiferal and nannofossil biostratigraphy of the Upper Cretaceous at Aurachtal-Herbstau and Nussdorf am Attersee (Helvetic units, Upper Austria)

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Planktonic Foraminifera and calcareous nannofossils from Ultrahelvetian limestone-marlstone cycles of the Upper Cretaceous at Aurachtal-Herbstau (SAG 1 profile) and Nussdorf am Attersee (ROTT 1 and ROTT 4 profiles), both in Upper Austria, were studied.

Grey coloured rocks from Nussdorf am Attersee (SAG 1 profile) represent pre-CORB-phase deposition and formed in a depositional environment with low oxidation. The planktonic foraminiferal assemblages from this site are characterized by the dominance of complex morphogroups represented mainly by *Thalmanninella* and *Rotalipora*; *Praeglobotruncana* forms a minor component of the assemblages. The co-occurrence of *Thalmanninella micheli*, *Th. globotruncanoides*, *Th. greenhornensis*, *Rotalipora cushmani*, *R. montsalvensis* and *Praeglobotruncana gibba* without *Dicarinella algeriana* indicates the lower part of the *Rotalipora cushmani* Zone—the *Th. greenhornensis* Subzone (middle to lower upper Cenomanian).

The reddish facies at Aurachtal-Herbstau (ROTT 1 and ROTT 4 profiles) represents the CORB-phase and shows the typical reddish colouration of the “Buntmergelserie”. Planktonic foraminiferal assemblages from these profiles show moderate diversity but poorly preserved. Assemblages are dominated by *Marginotruncana* (common: *M. pseudolinneiana*, *M. coronata*, *M. marginata*, *M. renzi*; rare: *M. sigali*, *M. sinuosa*, *M. undulata*, *M. tafayaensis*, *M. paraconcovata*, *M. cf. schneegansi*). The presence of *Archaeoglobigerina bosquensis* and *Macrohedbergella flandrini* and the absence of first representatives of *Globotruncana* indicate the *Marginotruncana schneegansi* and lower part of the *Dicarinella concavata* Zones in the ROTT 1 and ROTT 4 profiles. However, a lack of *Dicarinella concavata* does not facilitate to place the boundary between the two zones. According to planktonic Foraminifera, the ROTT 1 and ROTT 4 profiles represent upper Turonian–lower Coniacian strata.

Calcareous nannofossils are generally badly preserved and show strong recrystallization. However, several marker species could be found. In the grey facies of SAG 1 we recorded the presence of *Corollithion kennedyi*, *Cretarhabdus striatus* and *Lithraphidites pseudoquadratus* indicating nannofossil zones UC1–UC4, most probably the higher part of UC1 of middle Cenomanian age. The red facies of ROTT 1 and ROTT 4 yielded biostratigraphic marker species such as *Eiffellithus eximius*, *Lithastrinus septenarius*, *Marthasterites furcatus*, and higher up in the sections in addition rare *Micula staurophora* and *Lithastrinus grillii*. These markers indicate nannofossil zones UC9 and UC10, and thus late Turonian to middle Coniacian ages.