



## The upper Bartonian to Chattian Inntal Group (nov.nom.) in the Northern Calcareous Alps (Austria, Germany)

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Fugger (1907) was the first to describe Eocene limestone containing corals and oysters at the abandoned Kirchholz quarry near Bad Reichenhall (SE Germany). With a transgressional conglomerate the limestone succession rests on Upper Cretaceous Nierental Formation. Utilizing planktonic foraminifera from a single marlstone layer, Hillebrandt (1962) assigned the base of the transgressional sequence to the lower to middle Lutetian. For our study, we processed one sample of the marlstone for planktonic foraminifera and calcareous nannoplankton. Both assemblages consist essentially of reworked Cretaceous and Paleogene specimens. *Acarinina cuneicamerata* and *Igorina wartsteinensis* indicate the upper Ypresian planktonic foraminifera Zone E7a in the classification scheme of Wade et al. (2010). Beside substantial admixtures of Ypresian material (e.g. common *Discoaster lodoensis*), calcareous nannoplankton assemblages contain species (e.g. *Discoaster saipanensis*, *D. tanii*, *Nannotetrina cristata*), which have their first occurrences in the Lutetian Zone NP15 in the zonation of Martini (1971). However, thin sections of the limestone display larger benthic foraminifera species not only from the Ypresian and Lutetian but also from the upper Bartonian to lower Priabonian Shallow Benthic Zones SBZ18 to SBZ 19 (e.g. *Discocyclusina pratti pratti*, *Asterocyclusina stellata stellata*, *Orbitoclypeus varians varians*). Therefore, all older specimens encountered are interpreted as reworked.

The results from the Kirchholz quarry are consistent with previously published data (Risch, 1993) from the near-by Nierental. There, the transgressional base of the Eocene limestone contains *Chapmanina gassinensis* with a stratigraphic range from SBZ18 to SBZ20. Close to the Nierental, a small Eocene reef occurs at Eisenrichterstein. *Nummulites striatus* in concurrence with *N. aff. ptukhiani* (Darga, 1992) indicate SBZ 18. Lithostratigraphically, the upper Bartonian to lower Priabonian detrital and reefal limestone is formalized here as Kirchholz Formation (nov.nom.).

Up to now, the limestones of the Kirchholz Formation were attributed to the Gosau Group of the Adriatic Plate. However, deep-water sedimentation of the Gosau Group ended in the Lutetian, probably as a result of the continent-continent collision of the Adriatic and European Plates. Pronounced uplift of the Adriatic Plate caused emersion and erosion and was followed by new subsidence and marine and terrestrial sedimentation till the Late Oligocene. Deposits of this sequence are mainly preserved along the large ISAM-fault system.

A major part of the deposits of this post collisional sedimentary cycle occurs around Kufstein in the valley of river Inn ("Tertiary of the Inntal"). There, Ortner & Stingl (2001) have lithostratigraphically formalized a number of formations (Häring Fm., Paisslberg Fm., Unteranger Fm., Oberanger Fm.). Together with the Kirchholz Fm these formations are summarized as Inntal Group (nov.nom.).

### References:

- Darga, R., 1992, *Münchener geowiss. Abhandlungen, Reihe A*, vol.23.  
Fugger, E., 1907, *Jahrbuch k.k. geol. Reichsanstalt*, vol.57.  
Ortner, H., Stingl, V., 2001, *Österr. Akad. Wiss. Schriftenreihe erdwiss. Komm.*, vol.14  
Risch, H. (1993), *Erläuterungen zum Blatt Nr.8343 Berchtesgaden West*