

Stratigraphy of the Turonian-Coniacian boundary interval in the Gosau Group of Gams, Styria

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At Gams bei Hieflau, Styria (Northern Calcareous Alps of Austria), the presence of upper Turonian ammonites, inoceramids, micro- and nannofossils was reported from previous work, e.g., by Herbert Summesberger and Heinz Kollmann, including the type locality of the ammonite *Barroisiceras haberfellneri* (Hauer) at Radstatthöhe, between the villages of Mooslandl and Gams, within marls of the Grabenbach Formation. A renewed field survey in the framework of a Bulgarian-Austrian WTZ project indicated several new biostratigraphic results, based on bivalves, dinoflagellates, and calcareous nannofossils along road cuts and artificial outcrops NE of Radstatthöhe. The presence of *Barroisiceras haberfellneri* and the bivalve *Didymotis* attests for the interval of uppermost Turonian to lowermost Coniacian, where *Didymotis* events are known from several European sections. Small-sized representatives of the genus *Didymotis* were collected, which are preserved as internal moulds, only rarely with shell fragments attached. The specimens are almost equilateral, ornamented with relatively thick, widely spaced, rounded commarginal rugae. The radial ornamentation is visible in one specimen only. The sampled small-sized *Didymotis* with slender or no radial ornamentation are very similar to the *Didymotis* I morphotype considered to be part of the *Didymotis* I event in the upper Turonian *Mytiloides scupini* Zone at Salzgitter-Salder (GSSP for the base of the Coniacian). Based on this sparse *Didymotis* record we assume a late Turonian age (?*Mytiloides scupini* Zone) for the studied interval. One test sample from the Turonian-Coniacian boundary interval at Gams yielded a dinocyst association of moderate abundance and preservation. The association includes the following taxa: *Achomosphaera ramulifera*, *Canningia glomerata*, *Dinopterygium alatum*, *Isabelidium cooksoniae*, *Kleithriashpaeridium readei*, *Raetiaadinium truncigerum*, *Oligosphaeridium pulcherrimum*, *Spiniferites ramosus*, *Pterodinium cingulatum* and *Exochosphaeridium majus*. The concurrent presence of the dinocyst species *Raetiaadinium truncigerum*, *Oligosphaeridium pulcherrimum* and *Canningia glomerata* marks an age not older than late Turonian for the sampled succession, compared to the data from the recently established Turonian/Coniacian GSSP boundary stratotype at Salzgitter-Salder, Germany. Nannofossil data at Radstatthöhe report the presence of *Marthasterites furcatus* and *Lithastrinus septenarius*, indicating nannofossil standard zones CC13 and UC9 (upper Turonian–lower Coniacian). The absence of *Zeugrhabdotus biperforatus* may further indicate nannofossil subzone UC9a. Additional detailed stratigraphic investigations are planned in cooperation with the Geopark Steirische Eisenwurzen and in the framework of UNESCO IGCP-710.