

## Lower Cretaceous ammonites from the Northern Calcareous Alps (Hauterivian – Barremian, Upper Austria)

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A new ammonite fauna is presented for a Lower Cretaceous pelagic to hemipelagic succession of the Bajuvaric Langbath Zone (Northern Calcareous Alps, Upper Austria). The studied sites are outcrops of the High Bajuvaric Unit west of the Lake Traunsee, in the northernmost part of the Northern Calcareous Alps. The ammonites and accompanying fauna (nautiloids, belemnoids, aptachi, bivalves, gastropods, sponges, echinoids) from the Klausbachgraben area originates from the upper Hauterivian to lower Barremian deposits of the Schrambach Formation. The Schrambach Formation consists mainly of light and dark grey marly limestones and marls from the Lower Cretaceous. Ammonite material is known from private collections but nothing was published until today. The sites can only be accessed with permission from the forest agency, over a steep forest road which has its initial point on the main road from Altmünster at Lake Traunsee to Steinbach at Lake Attersee. Abundant ammonites enable recognising the standard Mediterranean ammonite zones, from the Upper Hauterivian *Balearites balearis* Zone (*Balearites balearis* Subzone) up to the Lower Barremian *Kotetishvilia nicklesi* Zone. Numerous ammonite species are documented for the first time from the Northern Calcareous Alps. Ammonite abundances are clearly linked to sea-level changes from Late Hauterivian to Early Barremian times. The accumulations in distinct layers (horizons, mass occurrences) are triggered by redeposition of ammonite shells. The ammonite composition of the Schrambach Formation sheds light on the Lower Cretaceous palaeobiogeography of the northernmost parts of the Northern Calcareous Alps, the Bajuvaric Units. The new ammonite fauna also provides insights into the faunal composition and distribution within the investigated interval, linked to other Mediterranean areas and assemblages.

The ammonite assemblage consists of 13 families including 28 different upper Hauterivian to lower Barremian genera: Phylloceratidae (4%) with *Phylloceras*, *Phyllopachyceras*; Lytoceratidae (5%) with *Lytoceras*; Desmoceratidae (51%) with *Plesiospitidiscus* (dominant element with 85%), *Barremites*, *Abrytusites*, *?Melchiorites*; Pulchelliidae (1%) with *Buergliceras*, *Discoideiella*, *Kotetishvilia*; Haploceratidae (1%) with *Neolissoceras*; Crioceratidae (27%) with *Crioceratites*, *Pseudothurmannia* (dominant element with 72%), *Paracostidiscus*, *Sornayites*; Emericiceratidae (1%) with *Honnoratia*, *Paraspiticeras*; Acrioceratidae (1%) with *Acrioceras*; Ancyloceratidae (0.25%) with *Toxancyloceras*, *Ancyloceras*; Leptoceratoididae (2%) with *Hamulinites*, *Sabaudiella*; Hamulinidae (4%) with *Anahamulina*, *Amorina*, *Hamulina*; Megacrioceratidae (2%) with *Liautaudia*, *Megacrioceras*; Macroscaphitidae (0.1%) with *Macroscaphites*. The nautiloid genus *Eucymatoceras* (1%) accompanies the ammonite fauna.