BACINELLA-TYPE FILAMENT STRUCTURES IN UPPER CRETACEOUS SHORE ZONE DEPOSITS (LOWER GOSAU SUBGROUP, AUSTRIA/GERMANY)

Felix Schlagintweit[1], Diethard Sanders[2], and Hans-Jürgen Gawlick[1]

[1] Montanuniversität Leoben, Department für Angewandte Geowissenschaften und Geophysik: Lehrstuhl Prospektion und Angewandte Sedimentologie, Peter-Tunner-Straße 5, A-8700 Leoben

[2] Institut für Geologie und Paläontologie, Fakultät für Geo- und Atmosphärenwissenschaften, Universität Innsbruck, Innrain 52, A-6020 Innsbruck

Bacinella irregularis Radoičič is a widespread Middle Triassic to Late Cretaceous micro-encruster of unclear taxonomic affiliation. *B. irregularis* consists of an aggregation of hollow chambers of erratic, irregular shape that are bounded by thin walls of micrite. It is reported mainly from reefal, peri-reefal and lagoonal habitats, where it prevalently encrusts bio- and lithoclasts, or occupies crevices (e. g. crevices on the outer side of shells, skeletons or tests) and cryptic habitats either in interstitial pores or in intraparticle pores (e.g. skeletal pores, borings). *Bacinella*-like „cell aggregates" known as alveolar texture also are present in terrestrial caliche carbonates. Within soils, alveolar texture may result from calcification of fungi in association with microbes, or from microbial aggregates. In the marine environment, most plausible interpretations of *Bacinella*-fabrics refer to microbes (cyanobacteria or micro-algae?), sessile foraminifera, or sponges.

At Mount Untersberg near Salzburg (Austria), a truncated substrate of Upper Jurassic Plassen Limestone is unconformably overlain by shore zone deposits („Untersberger Marmor") that comprise the basal part of an Upper Cretaceous succession (Lower Gosau Subgroup). The Untersberger Marmor is interpreted as a deposit of submarine debris aprons ahead of wave-dominated, transgressive gravelly to rocky carbonate shores. In samples of Untersberger Marmor from quarry Wallinger (Gröding/Salzburg), *Bacinella*-type structures were observed in mixed carbonate-lithic/bioclastic grainstones, as a bridging between individual litho- and bioclasts. Bioclasts include rare small arenaceous and rotaliid foraminifera, debris of coralline algae, serpulids, bryozoans and a large encrusting foraminifer (> 5 mm) with similar appearance of some morphotypes of *Lithocodium aggregatum* Elliott. In thin section, the straight to slightly curved micritic walls (width: ~ 0.02 mm) of the *Bacinella*-type fabrics connect sand grains, resulting in a compartmentalized „pseudo-cell" structure defined both by the grains and the micritic walls between. Some carbonate clasts show irregular surfaces with penetration of *Bacinella*-type structure into the clast, suggesting potential capability of boring. Aside of Mount Untersberg, grain-binding/encrusting *Bacinella*-type structures and cf. *Lithocodium* were found also in other successions of Untersberger Marmor, together with a bioclast spectrum characterized by coralline algae, sessile arenaceous and rotaliine foraminifera, branched bryozoans, serpulids, and (in the basalmost part) brachiopods and echinoid fragments. Conversely, rudist fragments are rare to absent, and colonial corals are extremely rare to most commonly absent. Our observations document the previously unreported presence of binding/encrusting *Bacinella*-type organisms in sandy to gravelly shore zone deposits. In comparison to other palaeoenvironments where *Bacinella*-type fabrics were reported, the overall abrasive shore zone depositional setting of the Untersberger Marmor represents an environment wherein sediment-binding organisms overall are scarce.