

Early Triassic microbialites at Baghuk Mountain (Central Iran)

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Permian-Triassic boundary sections in Central Iran are known for less than 50 years but became extremely important for the study of the most severe extinction event in the Phanerozoic [e.g. 1]. Sections at Baghuk Mountain, 45 km NNW of Abadeh, reveal some of the best outcrop conditions of marine Early Triassic sedimentary successions.

The studied Early Triassic sections in Central Iran are well-renown for the occurrence of organic (microbially mediated) and inorganic microbialitic structures and calcite fans [2]. They are diverse in scale, external morphology and internal structure. We distinguished three macroscopic morphotypes: (1) dome-shaped, conical and/or bulbous in shape with protuberance on top and round to ellipsoid form, (2) planar and lens- to dome-shaped forms with protuberance on top and (3) club-shaped and inverted conical in cross-section with dished upper surface. Common mesostructures are dendrolite (dendritic), stromatolite (laminated), thrombolite (clotted) or leiolite (structureless, aphanitic). Club-shaped microbialites were regularly growing on bivalve or ammonoid shells as solitary structures or small communities. Various microbialites are accompanied with keratose demosponges.

Preliminary analyses using scanning electron microscope reveal different diagenetic minerals incorporated in the microbialitic structures and the surrounding matrix; among Mg-calcite the matrix reveals authigenic feldspar, apatite, halite, iron oxides, zircon, barite, pyrite and ilmenite in modal composition. The microbialites are characterised by considerably less diagenetic mineral incorporation. The most common heavy mineral phase is barite.

[1] Taraz *et al.* (1981) *Memoirs of the Faculty of Science*, Kyoto University. Series of Geology and Mineralogy, **47**, 62-133.

[2] Heydari *et al.* (2008) *Palaeogeography, Palaeoclimatology, Palaeoecology*, **264**, 147-162.