Carboniferous Waulsortians and the Belgian Devonian récifs rouges were virtually considered as mud-mound archetypes. It is only since the middle of nineties that the term mud-mound is widely applied to Mesozoic sponge mounds.

In the north-eastern part of Tulcea tectonic Unit from North Dobrogean Orogen, around the Mahmudia village are cropping out Middle Triassic limestones, described in the literature as the first occurrence of Middle Triassic mud-mound deposits in Romania. Associated with zebra and stromatactis typical mud-mound structures, there are some carbonate crusts whose origin seemed to be microbial, but are clues to assume that are similar with cemented grainstone crusts.

The aim of the study is to separate the carbonate microfacies and it will include as methods, optical microscopy, staining and UV fluorescence as keys for sedimentary structures and frequency of allochems, cathodoluminescence (CL), scanning electron microscopy (SEM) and stable isotopes (C, O) analysis for microstructures and diagenetic features and petrography of fluid inclusions for paleoenvironmental conditions. In addition to the optical methods we have also investigated the geochemical composition of selected particles or lamina directly from polished slabs using a microXRF device (Horiba XGT 7000).

Among the carbonate microfacies separated so far, we can include Tubiphytes boundstone, radiolarian and sponge spicule wakestone with stromatactis, bioclastic grainstone to packestone, dolomitised bioclastic grainstone and laminitic mudstones.

The microbial nature of the mud-mound is sustained by the abundance of Tubiphytes, which dominate some areas resulting true boundstones, and the presence of Baccinella, a real microbial product. Metasomatism, dolomitization and cementation which affected the primary fabrics given by early marine diagenesis are proved also by the stable isotope analyses. A deep water environment (internal shelf – 70-100 m water depth) for the mud-mound is suggested by the typical wackestone with sponge spicules and calcified radiolarians or calcisferes.

U/Pb zircon geochronology on TTG rocks from South Carpathians (Romania): Insights into the geologic history of the Getic Crystalline Basement

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In situ U/Pb zircon geochronology was carried out on some minor granitoids intrusions from the western Getic domain (Buchin and Slatina-Timis intrusions) and on the swarm of trondhjemitic dikes, sills and small granodiorite bodies from the northern Getic domain - South Carpathians. According to previous petrological studies these intrusions are related to partial melting of a thickened continental crust. Most of the dated zircon crystals are composite, with xenocrystic cores surrounded by multiple overgrowths. Age results on inherited cores of the Buchin and Slatina-Timis intrusions reveal ages from Neoarchean to Late Proterozoic-Cambrian that represent inheritance from old crust. As revealed by ages from zircon overgrowths characterised by oscillatory zoning, the intrusion occurred in the Upper Cambrian-early Silurian. The outer rims of the Buchin zircons record the Variscan metamorphic peak conditions suffered by the Getic basement. The U-Pb ages on inner cores from rocks of the northern Getic domain reveal Paleoproterozoic to Neoproterozoic inheritance. Prevalent ages in zircon cores and rims are in the range 539-428 Ma and seem to date a major component forming the Caledonian crustal basement of the South Carpathians. Scarce but ubiquitous ages of 320-214 Ma on rims overlap the $^{40}Ar/^{39}Ar$ ages on mylonites from the shear zone and indicate imprints of the Late Variscan dynamic retromorphism. The magmatic intrusion occurred between 110 Ma and 105 Ma in agreement with previous Ar/Ar ages (109-108 Ma).