

The water level of the LGM North Evia lake has been found in seismic profiles at about 90 m below present sea level. Vertical tectonic movements are evident around the Gulf but have not been quantified yet, so the initial lake level can not be determined precisely. Holocene sedimentation in the Gulf is mainly depended on the fertile clastic material supplied by rivers which drain the surrounding mountains. The submerged prehistoric landscape is covered by marine sediments, their thickness being up to 40 m off the outflow of rivers along the southern margin. Limited sedimentation areas or even relict landscapes have been mapped away from river mouths.

Thorough evaluation of the seismic data and sedimentological and laboratory analyses of the sediment cores are essential for the precise reconstruction of the submerged prehistoric landscapes around the Corinth and North Evia lakes during the last glacial maximum and early Holocene. Vertical tectonic movements and sedimentation rates need to be quantified and considered for the final paleo-morphological reconstruction.

Preliminary results of provenance analyses of exotic magmatic and metamorphic rock pebbles from the Eocene flysch deposits of the Magura nappe (Krynica facies zone, Polish Outer Carpathians)

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During the Late Cretaceous to Palaeogene, the Magura Basin was supplied by clastic material from source areas situated at the northern and southern margins of the basin, which are presently not outcropped at the surface. The northern source area is traditionally connected with the Silesian Ridge, whereas position of the southern one is still under discussion. The south-Magura source area supplied the Eocene pebbly paraconglomerates containing partly exotic material. The studied clastic material contains fragments of igneous and metamorphic rocks, derived from a continental type of crust, and frequent clasts of Mesozoic to Palaeogene deep and shallow-water limestones. Volcanites, rarely granitoids as well as schists, gneisses, quartzites and cataclasites were found in the group of crystalline exotic pebbles. Monazite ages of “exotic” pebbles from the Tylicz and Piwniczna-Mniszek sections document the Variscan age of metamorphic rocks. The provenance of these exotic rocks could be connected with the Eocene exhumation of the SE sector the Magura Basin basement or by supply of crystalline material from remote SE source area (Dacia and Tisza mega units).

The seasonal variations of ultraviolet radiation result in changes of human serum bone turnover markers

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Vitamin D is recognized as the sunshine vitamin playing a vital role in maintenance of skeletal health. Vitamin D status depends on latitude, as vitamin D₃ is synthesized in the skin under the influence of UV irradiation from the sun mainly during spring and summer. Biochemical markers of bone turnover can be classified according to the process that underlie in markers of bone formation, [bone ALP, osteocalcin] and markers of bone resorption, [pyridinuum crosslinks, collagen I C- and N-terminal telopeptides (CTX-I and NTX-I)].