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The late Middle Miocene vertebrate fauna of Gratkorn (Late Sarmatian, Styria, Austria) – Initial overview

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Highly timed vertebrate faunas of late Middle to earliest Late Miocene age are very rare in the (Central-)Paratethyan area. Ongoing investigations and excavations at the locality Gratkorn (clay pit St. Stefan; 15°20'55"E/47°08'15"N) emphasize increasingly its key position for a high-resolution continental biostratigraphy and the comprehension of faunal successions and interchanges near the Middle/Late Miocene turnover. Integrated stratigraphy point for this site to an age of 12–12.2 Ma (early Late Sarmatian s.str.).

Beside the remarkable crustacean fauna (freshwater crabs, ostracods) of the hanging wall limnic pelites (Gross, 2008; Klaus & Gross, in press), the basal c. 0.5 m thick hydromorphic paleosol contains several poorly known terrestrial gastropods of biostratigraphic importance (Harzhauser et al., 2008) and a highly diverse vertebrate fauna. The vertebrate remains are irregularly dispersed throughout the paleosol and well-articulated skeletons are missing. However, skeletal elements belonging to the same individual were found commonly close to each other. The distribution of skeletal remains, many fractured bones and traces of gnawing point to some time of surface exposure before burial, but without considerable *post mortem* allocation. Trampling, crunching as well as some displacement of cadavers are probable due the activity of scavengers. Local accumulations of small- and medium-sized vertebrate remains (skull- and postcranial-remains) of e.g., hamsters, flying squirrels, gymnures, and shrews, amphibians as well as small-sized reptiles may indicate pellets of birds of prey. The vertebrate-bearing paleosol is interpreted to be deposited in highly structured, more or less vegetated alluvial fan-/braided river-landscape, which offers a variety of habitats for the biota (active and abandoned fluvial channels, temporary ponds, ephemeral moist floodplains, but also nearby dryer open areas and limestone screes of the adjoining Palaeozoic mountain range). An overall semiarid climate is supported by faunal composition (gastropods and ectothermic vertebrates) and sedimentological observations (development of calcrete horizons below the fossiliferous horizon), which corresponds well with the late Middle/early Late Miocene dry-spell in Central Europe (e.g. Böhme et al., 2008).

Up to now more than 50 vertebrate taxa – some of them are new ones – are documented, making this locality to one of richest and most complete faunas of the late Middle Miocene of Central Europe. So far the fauna comprises of: scattered fish remains (e.g. cyprinids, gobiids, ?channids), amphibians (e.g. salamandrids, ranids, discoglossids, bufonids, pelobatids), reptiles (scincids, lacertids, gekkonids, anguids, varanids, colubrids, testudinids, emydids), birds (colliiformes), rodents and lagomorphs (cricetids, glirids, eomyids, sciurids, castorids), insectivores and chiropterans (erinaceids, soricids, talpids), and large mammals (suids, tragulids, moschids, cervids, ?palaeomerycids, equids, chalicotheriids, rhinos, proboscidiens, carnivores).

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