(7) Continental molasse environments above (1-4).
During the Late Paleozoic NE parts of the Pelso Block („Bükkium" auct.) without any Variscan deformation/metamorphism reveal strong relationships to the Medvednica Complex, Jadar Block and Sana-Una Terranes of the Dinarides from which they were separated by Mesozoic movements. This domain is characterized by a Late Pennsylvanian - Permian shallow marine clastic/ carbonate facies above older pelagic and sililciclastic turbiditic sediments. The highest nappes of the Graz Paleozoic, without a Variscan break until the Westphalian, are exotic for the Eastern Alps. All the other domains include Variscan deformation/low grade metamorphism and unconformable continental molasses of different geodynamic settings. Syn-orogenic Carboniferous flysch sedimentation is problematic for the Eastern Alps and Western Carpathians, but well established for the W-Carpathian Turòa unit. The Carboniferous siliciclastic sequences of the Szendrõ and Bükk Units of Pelso C.T. are not regarded as syn-orogenic flysch because they are devoid of any Variscan tectonic deformation, metamorphism and post-orogenic molasse sediments.

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A giant fossil termite from the Late Miocene of Austria

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Modern climates supporting „giant" insects are tropical or warm xeric environments, while such hotter conditions along with hyperoxic atmospheres were conducive to enormous arthropods in Paleozoic and other palaeofaunas. Among the ecologically pervasive and highly social termites, such giants are exceptionally rare.
Recently, however, a giant termite, representing a new taxon, which belongs to a primitive, basal grade of termites near the Hodotermitidae s.l. and Termopsidae s.l, was recovered from Late Miocene (Lower Pannonian, c. 11.3 mya) sediments of the Styria Basin. This prodigious species, with its wing length of 33.5 mm (and possible wing span of nearly 80 mm, when thoracic width is also considered), was discovered in floodplain deposits of a meandering river system at Paldau. Palaeobotanical investigations point to a warm-temperate, or even subtropical climate.
Certainly the cold-temperate environs of modern Europe have proved unsuitable for a diversity of termite lineages, and have been unable to sustain populations of large termite species such as those seen in the tropics. Nonetheless, such larger species are actually few in number. The largest winged reproductives being those of the genus *Syntermes* (Termitidae: Syntermitinae) from the tropics of South America, with individual wings up to 35 mm in length. Among more primitive termite families, several species of the family Termopsidae and the sole survivor of the Mastotermitidae, *Mastotermes darwiniensis*, are all robust and can have wing lengths up to 26 mm. The new discovery was certainly a giant among living and fossil termites and, by comparison, most other species of termites, living or extinct, were relative dwarves.

The Steinbrunn sand pit revisited: Tectonic or gravitational forcing of soft sediment folds?

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The Steinbrunn sand pit 7 km WNW of Eisenstadt, Burgenland, represents a spectacular example of deformed unconsolidated/ partly consolidated sediments (Sauer et al. 1992). The exposed series of SW-verging, tight folds within virtually unconsolidated sand and silt layers have been attributed to a Pannonian E-W compressional phase of basin inversion which interrupted the main E-W extensional phase in the early and middle Miocene (Peresson & Decker 1997). However, the recent re-excavation of the outcrop facilitates several new observations that question the previous interpretation.
Most of the calcareous sand-sized sediment is unconsolidated, only some layers show cementation, often decreasing laterally within one layer. The basal parts of the exposed sediment shows cm to m thick beds of more cohesive silt and silty clay, which form conspicuous flame-shaped geometries in the fold cores typical for soft sediment deformation. Conjugate sets of normal faults in parts of the NE-dipping fold limbs cut through sandy layers and terminate within silt layers. Markers within the sand layers display only few cm of normal offset, but the fractures are filled with up to 2 cm thick clay fed from the overlying clay layer. This observation suggests that the sediment was even more unconsolidated during the formation of these structures. Most of the observed folds have a tight fold geometry with straight fold limbs and amplitudes of several meters. In the westernmost part of the outcrop, some fold axial planes are refolded, forming type 3 (hooks-and-crescent) fold refold structures with high angles between the axial planes and parallel fold axes. These fold shapes indicate either polyphase folding, which seems unrealistic for a short phase of basin inversion, or high strain during progressive folding and shearing of soft sediments in gravitational slump structures.
Regionally, outcrops within the same stratigraphic level do not display any comparable structures with E-W shortening kinematics. In contrast, exclusively E-W extensional structures (faults and deformation bands with normal offset) can be observed. Area balancing suggests a detachment horizon roughly 2m below the present level of exposure. Line-length restoration of the deformed succession indicates roughly 50% of E-W shortening. Clearly, an extrapolation of this estimation to a basin-wide shortening is inappropriate, as already suggested by Peresson & Decker (1997). However, even a local area of tectonic shortening in the E part of the Vienna basin seems unrealistic considering the restriction of this observation to this single outcrop. Thus we propose an alternative interpretation of the deformation features as the frontal zone of a gravitational slump, where contractional strain leads to the formation of tight folds.

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