Reservoir studies on glauconitic deep-water sandstones of the Greifenstein Formation (Paleogene, Rhenodanubian Flysch Zone) - outcrop analogues for hydrocarbon reservoirs in the Vienna Basin

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The reservoir properties of glauconitic sandstones of the Greifenstein Formation in the quarry Strombauamt in Lower Austria were investigated to find analogues to deep-water sandstones buried below the Neogene of the Vienna Basin. The upper Paleocene to lower Eocene Greifenstein Formation is the uppermost unit of the Greifenstein nappe, belonging to the Rhenodanubian Flysch Zone. In the outcrop, geometries of massive and thick-bedded sandstones indicate the presence of small (5-15 m wide) roughly east-west trending channels which show varying degree of interconnection.
The sandstones are glauconite rich quartz arenites, most of them cemented by Fe-dolomite.
Porosity values of 2 to 8 % of the majority of the sandstones indicate that these rocks do not posses good reservoir properties. Permeability values generally range between 4.5 and 6.5 mD. Due to the low porosity and permeability values of the sandstone samples it is evident, that the reservoir properties of sandstones of the exposed Greifenstein Formation are poor and that the reservoirs in the subcrop of the Vienna basin must be fracture-related.

Carnian (Upper Triassic) ammonoid assemblages from the Kasimlar Formation of the Taurus Mountains (Turkey)

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Two Upper Triassic ammonoid assemblages, bearing one new genus (Kasimlarceltites) and 3 newly established species (Kasimlarceltites krystyni, Klipsteinia disciformis and Anasirenites bicarinatus), have been described for the first time from the Kasimlar Formation of the section Asagiyaylabel (Anatolia, Turkey). The 35-m-thick section generally represents a drowning sequence, deposited during a major climate Crisis, the Carnian Crisis, which could be recognized somewhat time-delayed at Asagiyaylabel compared to other places of the Tethyan Realm (Lukeneder et al. 2012). A drastically faunal change from the Lower- (Austrotrachyceras austriacum Zone, Julian 2) to the Upper Carnian (Tropites dilleri - Tropites subbullatus Zone, Tuvalian 1) is clearly reflected at this section. Due to the appearance of Anasirenites bicarinatus, the top of the Carbonate member Unit C could be classified in more detail as Julian II/2. The assemblages generally bear 13 ammonoid genera and 14 ammonoid species. Due to similarities within the faunal composition to numerous comparable Upper Triassic localities in East-Central Europe, Eastern Europe, Asia, Central America as well as North America, a Mediterranean-Tethyan-Andean character could be recognized. Anyhow, the newly established species in contrast depict some faunal differences in comparison to the remaining known Carnian ammonoid faunas (Lukeneder, S. & Lukeneder, A. submitted).

Lukeneder S., Lukeneder A., Harzhauser M., Islamoglu Y., Krystyn L., Lein R. 2012. A delayed carbonate factory breakdown during the Tethyan-wide Carnian Pluvial Episode along the Cimmerian terranes (Taurus, Turkey). Facies 58, 279-296.
Lukeneder S., Lukeneder A. 2012. A new Ammonoid Fauna from the Carnian (Upper Triassic) Kasimlar Formation of the Taurus Mountains (Anatolia, Turkey). Palaeontology, submitted.

Computed tomography in palaeontology - Triassic and Cretaceous case studies

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Case studies on computed tomography on ammonites, ammonite mass-occurrences and trace fossils, deposited during the Upper Triassic (approx. 225 mya) of Turkey and during the Lower Cretaceous of Italy (approx. 130 mya), are presented. X-ray computed tomography is known in palaeontology as providing data for 3D visualization and geometrical modelling techniques.