m.y. documented in the core Klonk-1. Within the Upper Ludlovian a regression is indicated by an increase of terrigenous input, a decrease of the autochthonous carbonate fraction and an increase of the amount of organic matter. While the regressive trend continues in the limestone beds until the Middle Pridolian, a transgression is documented in the pelitic layers with the beginning of the Pridolian which was followed by a short-term regressive event in the Middle Pridolian stage. In the Middle Pridolian another transgression starts and ends in the lowermost part of the Lochkovian. Accordingly, the amount of terrigenous matter as well as the amount and the quality of OM decreased and the amount of the carbonate fraction increased.

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Thermal maturity of the Carboniferous and uppermost Devonian rocks of the western European Variscides with special emphasis on the effect of strain on illite crystallinity

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Thermal maturation levels in the Upper Devonian and Carboniferous rocks of the South Portuguese Zone and southern Irish variscides are generally high, with vitrinite reflectance (VR) values ranging from c. 2 % - >6 $\%R_m$. VR determinations from rare coals are more-or-less identical to those from associated mudrocks, proving that reworking of vitrinite is not a significant source of error. Poor correlation between vitrinite reflectance and illite crystallinity (IC) in the extensive dataset from the region is attributed, amongst others, to strain. There is no correlation between VR and stratigraphic position in the surface samples studied, suggesting syn- to post-tectonic maturation rather than simple burial maturation. Thus, IC values can be attributed to regions of different tectonic styles. A similar effect has also been observed on a small scale. Samples which were taken from a 14 m vertical section of sandstones and mudrocks of the latest Devonian Old Head Sandstone Formation at Toe Head, County Cork, showed higher crystallinities for cleaved mudrock samples than for uncleaved.

IC has shown to be controlled by several parameters. Therefore, a new alternative method - CSD (clay crystallite size distribution) - is currently discussed. It is expected to prove a more reliable maturation indicator in mudrocks.

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The Late Creteceous El Molino Formation: Reconstruction of a terrestrial depositional environment - a sedimentological and palaeoecological approach

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A detailed analysis of the 170 m thick El Molino Formation (Maastrichtian to Early Tertiary) in the region of Sucre (Bolivia) indicate an almost continuous continental deposition in this part of the central paleo-Andean Basin. The section can be divided into two depositional periods, a fluvial at the base and a predominantly lacustrine in the higher part.

The basal fluvial episode has been deposited in a delta setting with major floodplain sediments overprinted by pedogenesis, rootmarks and bioturbation. Those are sometimes eroded by channels (mature sandstones), the scarce fossil content (insect remains, plant material) indicates a terrestrial environment.

The following lacustrine episode has been deposited in an extensive perennial lake with low gradient ramp-type margins. Three different faciesbelts can be recognized throughout the section.

The inner marginal lacustrine facies (IMLF) includes oolite- and oncolite-bearing grainstones showing episodic dessication features, thrombolites and calcretes that formed under semiarid climatic conditions.

The outer marginal lacustrine facies (OMLF) consists predominantly of ostracod-packstones and wavy to pillow-shaped stromatolites. More agitated areas are characterized by oolitic grainstones. The diverse fossil content (ostracods, gastropods, fish, characeans) suggests that the water was of low salinity during most of the period.

The open lacustrine facies consists of greenish claystones, wackestones, laminated micrites and coquinas. These lithologies often include reworked clasts from the IMLF and OMLF that was swept into the basin.

Bleeched palynomorphs, charophytes and felspar-dominated alterated volcanic products indicate episodic deposition in an alkaline shallow lake during periods with higher evaporation rate (ROUCHY et al. 1993).

Palaeocurrent measurements of orientated gastropods and strike of ripple-crestlines show a prefered NE-SW trending current patterns. These and the orientation of dinosaur trackways (MEYER et al. 1999) indicate a NW-SE striking paleo-shoreline.

Sedimentation in this terrestrial environment was mainly controlled by variations in hydrology. Small scale lake-level fluctuations are most probably caused by climatic changes. Large scale hydrological changes are related to tectonic movement in the Andean orogenic belt.

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