Hangende baut sich aus einer Wechselfolge der nachfolgenden lithologischen Gruppen auf:
- Orthokonglomerate (Okg) mit einem Matrixanteil (Ton-Schluff) < 15 %
- Parakonglomerate (PKg) mit einem Matrixanteil (Ton Schluff) > 15 %
- Kalkarenite mit runden bis eckigen Komponenten zwischen 0,5-3 cm Größe
- Kalkarenit
- Kalksiltit mit runden bis eckigen Komponenten zwischen 0,5-3 cm Größe
- Kalksiltit
- Mure (debris flow)

Die Entstehung der Sedimente ist nur in Verbindung mit der Rheingrabenbildung zu verstehen. So sind die vorgefundenen Phacoide an der Basis der tertiären Abfolge durch Scherspannungen entstanden, die durch die ersten lokalen Einsenkungsvorgänge ab dem Eozän verursacht wurden. Durch die fortschreitende Einsenkung kam es lokal zu Muren (debris flows) und zu einer starken Zufuhr von feinem bis groben Material von den Grabenrändern, die die Bildung der marginalen Schuttfächer (alluvial fans) zur Folge hatten. Welche Ausdehnung die Schuttfächer hatten, kann nicht eindeutig geklärt werden, da es trotz der relativen räumlichen Nähe der Bohrungen zueinander nicht möglich ist, sie zu korrelieren.
Die Liefergesteine der tertiären Sedimente waren mesozoische Sedimente (überwiegend Dogger), die auf dem heutigen Schwarzwald lagen. Soweit möglich, wurde in den einzelnen Bohrabschnitten versucht, die Liefergesteine zu erkennen. Zu beobachten ist, dass in verschiedenen Bohrkernniveaus die gleichen Liefergesteine vorkommen. Dies erlaubt den Schluss, dass sich benachbarte Schwemmfächer miteinander verzahnten und zur gleichen Zeit unterschiedlich tief in die Liefergesteine einschnitten.

Zusammenfassung:
- Aufgrund der ersten Senkungsbewegungen im Rheingraben kam es zur Bildung von Phacoiden an der Basis der Tertiär Sedimente.
- Lokale Reliefversteilung führte zur Entstehung von Muren (debris flows).
- Zunehmende Einsenkung des Oberrheingrabens führte zur Bildung von marginalen Schwemmfächern (alluvial fans).
- Verzahnung der Schwemmfächer (alluvial fans).

Neptunian dykes filled with Middle Jurassic sediments in the High-Tatric series, Tatra Mountains, Poland

LUCZNYSKI, P.

Instytut Geologii Podstawowcj, Uniwersytet Warszawski, ul. Zwirki i Wigury 93, PL-02-089 Warszawa, Poland, achmed@geo.uw.edu.pl

The High-Tatric series constitute of three main tectono-facial units lying in autochtonous and allochtonous positions in relation to the crystalline core of the High Tatras - the autochtonous Kominy Tylkowe unit and two foldic units (Czerwone Wierchy and Giewont). In the Kominy Tylkowe unit the sedimentation was continuous across the Triassic-Jurassic boundary, and the Lower Jurassic is represented by the carbonate-clastic Dudziniec formation (LEFELD et al. 1985). In the foldic units a major stratigraphic gap exists and the Middle Jurassic deposits rest directly on the Middle Triassic (Anisian). The Jurassic profile in this areas begins with white crinoidal limestones of the Smolegowa formation (Bajocian), red ferruginous crinoidal limestones of the Krupianka formation (Batonian) or even with wavy bedded Callovian limestones building the bottom part of a thick Raptawicka Turnia formation. A distinct group of connected fissures, displaying common features concerning the infilling sediments and character of walls is referred to as a "system of neptunian dykes". It has been treated as a unit in quantitative considerations. 87 individual systems, penetrating the Middle Triassic, have been distinguished in the High-Tatric series (LUCZYNSKI 1999). They belong to six types:
- dykes filled with Smolegowa limestones (8),
- dykes filled with Krupianka limestones (26),
- internal breccias (15),
- dykes filled mostly with calcite cements (6),
- dykes filled with *rot pelit* (13),
- dykes connected with pressure solution structures (19).

The history of neptunian dykes is commonly divided into stages of initiation of voids, their development and their infillment by sediments. Each stage has been studied separately. A tectonic nature of the initiation processes has been postulated, basing on measurements of orientation of fissures in selected systems, their shapes and character of distribution. The investigations concerning the stage of void development were based mainly on the observations of the dykes walls. Dykes filled with calcite cements, Krupianka limestones and particularly with Smolegowa limestones show little influence of development processes on their final shapes and sizes. Repeated tectonic movements lead to the formation of internal breccias with numerous sharp-edged fragments of the host-rocks incorporated into the infillment of voids. Karstic dissolution caused the development of extensive systems of sills filled with *rot pelit*, part of which was subjected to intensive pressure solution. Dykes filled with Smolegowa limestones were mostly filled under hydrostatic pressure directly after their opening by loose sediments lying on the sea-bottom. Dykes with Krupianka limestones were filled by crinoidal debris pouring into open fissures, as it was transported on the bottom in form of megaripples. Fissures with poor communication with the sea-bottom were being closed by calcite cements. Deposition in extensive systems of thin sills was subjected to a sieving process, leading to their infillment by pelitic material. Marine, pelagic character of *rot pelit* was confirmed by stable isotope studies.
The distribution of various types of neptunian dykes in particular tectono-facial series was investigated and interpreted in terms of paleotectonic development. A distinct concentration of internal breccias in the eastern part of the autochtonous unit is probably connected with a numerously reactivated fault-scarp. Dykes filled with *rot pelit* and connected with pressure solution structures, revealing the influence of karstic processes on their development, group mainly in the Czerwone Wierchy series, what points for a temporary emergence of this unit during the Middle Jurassic. Abundance of dykes of tectonic origin filled with Batonian deposits indicate that a peak of extensional activity took place during that stage.

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Lower Silurian 'Hot Shales' in North Africa and Arabia: Refined depositional model for a world-class petroleum source rock

LÜNING, S.

Lasmo plc, 101 Bishopsgate, London EC2M 3XH, UK

The lowermost Silurian hot shales are thought to be the origin of 80-90 % of all Palaeozoic-sourced hydrocarbons in North Africa (BOOTE et al. 1998) and they also played a major role in petroleum generation on the Arabian Peninsula, particular in Saudi Arabia, Oman, Jordan and Iraq. The shales were deposited directly above upper Ordovician (peri-) glacial sandstones during the initial early