

PETROLEUM GEOLOGISCHE KRING

KONINKLIJK NEDERLANDS GEOLOGISCH MINBOUWKUNDIG GENOOTSCHAP



PGK

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Venue: PGK's monthly lectures are held at the KIVI building, Prinsessegracht 23, Den Haag. Drinks are served from 5 PM; the lecture starts at 6 PM.	www.pgknet.nl
Membership:	Apply for membership by contacting the secretariat. Euro 15,-
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NOVEMBER NEWSLETTER

20 NOVEMBER: MONTHLY MEETING

The next monthly meeting will be on Wednesday 20 November. As usual, social hour (free drinks) between 17:00 and 18:00 hrs. A lecture will be given by **Frank van den Belt** (TNO-NITG) with the title:

“The decay of the Variscan orogen and its effect on Carboniferous, Rotliegend and Zechstein sedimentation”

Please see other side of this newsletter for the lecture abstract.

UPCOMING PGK ACTIVITIES

18 December: Christmas Meeting, lecture and buffet. Mervin Frumau (AGIP KCO):
“From Amsterdam to Beijing on bike”.

22 January: Subject to be announced.

OTHER ACTIVITIES

28 November: Presentation of the NITG Subsurface Map Sheets VII & VIII in 'Provinciehuis Zuid Holland', Den Haag, 13:30.

Monthly meeting: Wednesday 20 November 2002
Address: KIVI building, Prinsessegracht 23, Den Haag
Social hour: (free drinks) between 17:00 and 18:00 hrs
Lecture: at 18:00hrs

The decay of the Variscan orogen and its effect on Carboniferous, Rotliegend and Zechstein sedimentation

FRANK VAN DEN BELT

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During the late Westphalian the Variscan orogeny culminated with the emplacement of nappes just south of the Netherlands. This caused a reorganisation of the broad and shallow Variscan Foreland Basin, which hosted widespread peat swamps during the early Westphalian. A series of relatively isolated sub-basins came into existence during the Westphalian C. These basins received fluvial sediment from nearby uplifted areas such as the Zandvoort-Krefeld High. The orientation of these basins was directly related to the position of Variscan thrust and wrench faults.

Following nappe-emplacment the Variscan foreland became increasingly dissected by NW-SE aligned wrench fault systems. Transtensional movements along these faults caused regional extension and crustal thinning resulting in the Late Variscan thermal uplift and erosion of the Saalian event.

Continued faulting eventually resulted in the formation of the E-W aligned Southern Permian Basin. During the 'Rotliegend period' differential vertical movements resulted in the creation of wide graben systems which served as conduits and sinks for southerly-derived sediment. In the south of The Netherlands a 35 km wide, sand-filled graben was present. This graben evolved into the Roer Valley Graben and West Netherlands Basin during the late Permian and Mesozoic.

Transtensional activity of the wrench fault system controlled the carbonate, clastic and evaporite deposition during the 'Zechstein period'. Lateral facies changes, as well as thickness changes are linked to the location of faults. Thick anhydrite and halite deposits only occur north of the Zandvoort-Krefeld High; instead carbonates of the Z1-cycle are restricted to the high. The Zechstein successions in the southern offshore are characterised by the unusual occurrence of ephemeral fluvial sandstones. Their absence in the onshore sector is attributed to a changing fault pattern. The sandstones may have been sourced from local Rotliegend sand accumulations. Palaeogeographical reconstruction suggests that these sands were derived from the above-mentioned Rotliegend graben after dissection by strike-slip faults.

During the late Zechstein, faulting less influenced the Southern Permian Basin. A change to thermal subsidence resulted in a more regional subsidence pattern, with differential subsidence occurring along a few major faults. The late Triassic to early Cretaceous Kimmerian events which reflect the break-up of Pangea caused reactivation of late Paleozoic faults: the Jurassic West Netherlands Basin was bounded and fragmented by those same faults that dominated the Permian.

Please post it on the board of your office building. New members and guests welcome!

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