

# MINERALOGICAL MAGAZINE

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## Mineralogical studies of petroleum genesis, migration and entrapment

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THE following seven papers were presented at a joint meeting of the Applied Mineralogy Group and the Petroleum Group of the Geological Society, held in Newcastle upon Tyne in April 1986. The theme of the conference arose from the considerable amount of interest in common between petroleum geologists and ore mineralogists, particularly with respect to both fluid inclusion studies and experimental studies of mineral-fluid reactions, and their application to geological problems. In total, thirteen papers were presented at the meeting. In addition to those published here, Burley, Matter and Mullis (Bern) presented the results of a study of the Tartan field, relating diagenetic zoning to fluid flow via faults into the reservoir, deduced from combined petrographic and fluid inclusion data. Walgenwitz and Pagel (SNEA, Pau and CREGU, Nancy) then gave details of a fluid inclusion study of the Angola offshore basin, which was used to distinguish diagenetic brines in two reservoir rocks, and to deduce palaeotemperature gradients in the region. Further fluid inclusion data from calcite-filled fractures in the chalk of the Danish sector Skjold oilfield were presented by Jensenius (Copenhagen University), who inferred that the fluids responsible for the vein fills were derived from depth, and were associated with late Miocene-Pliocene salt movements. Gize and Richardson (Southampton and Iowa State Universities) then presented results of studies of

hydrocarbon fluid inclusions from the Cave-in-Rock fluorite district (Illinois), where colour bands in fluorite can be correlated throughout the orefield, and where certain fluid inclusion types contain composite hydrocarbon-aqueous fluid-gas mixtures. Reports of fluid inclusion studies were then followed by other geochemical and regional studies. Hamilton, Blackburn, McLachlan and Fallick (SURRC, Britoil, Britoil and SURRC) presented the results of C, O and Sr isotope studies of calcite doggers from the Rannoch formation, which support the possible influence of meteoric water during diagenesis. Finally Thomas, Lacharpagne and Brevart (SNEA, Pau) presented the results of a model for diagenetic processes in Jurassic reservoir sandstones from the northern North Sea basin, in which three hydrodynamic systems were distinguished.

Overall, the meeting succeeded in its aim of bringing together workers from different fields with common technical interests — around 100 attended from many institutions, companies and countries. There was considerable formal and informal discussion both during the meeting and associated field visit to the Permian of the Durham coast, led by Dr G. M. Harwood. Quite clearly very much stimulating research is currently in progress; it would be rewarding to hold a similar meeting in two or three years time to see what new developments have been made.