AAPG "Structural Traps VIII", Treatise of Petroleum Geology, Atlas of Oil and Gas Fields

compiled by **Norman H. Foster and Edward A. Beaumont**, published by the American Association of Petroleum Geologists, Tulsa, Oklahoma 74101, USA, ISBN 0=89181-590-2, 328 pages.

Review by **Christopher G. Kendall**

This book follows the format of the other AAPG treatise and focuses on some 15 fields which are reviewed in terms of their location, history of discovery, structure, stratigraphy, trap style, and the exploration concepts used to discover the field. This volume is mainly concerned with structural traps.

The text begins with the Mereenie field of the Amadeus basin of the central Australia. This reservoir is an elongated anticlinal trap whose character is in part controlled by the diagenesis of a series of Ordovician sandstones. The play was drilled on the basis of some well-developed and exposed structures identified on both on aerial photographs and landsat imagery. This field's significance is enhanced by the fact that it highlights the significance of finding hydrocarbons in central Australia well away from apparent source rocks.

The next five studies deal with fields in the Middle East. The first of these describes the Razzak-Alamein Basin of the northern western desert of Egypt. Production here is from the Lower Cretaceous Alamein dolomites and sandstones and the Upper Cretaceous Abu Roash dolomites and the Upper Cretaceous Baharriya sandstone. This is followed by a paper which describes the Ain Zalah Field of Zagros Folded Zone of Northern Iraq. Here production is from the Upper Cretaceous Maastrichtian and Campanian, Upper Shiranish Formation in the Middle Cretaceous Albian Qamchuqa formation.

Next are two papers on two fields set in the United Arab Emirates, namely: the Asab Field which occurs in the Lower Cretaceous Kharaib formation, whose reservoir sediments accumulated in a shallow water carbonate shelf setting; and the Bu Hasa Field from the Rhub al Khali Basin in Abu Dhabi which is in the Lower Cretaceous Shuaib formation, a rudist reefal complex set at the margin of the Rub al Khali intershelf basin.

For completeness, there is a paper which describes a field area from Israel, namely the Zohar-Kidod-Haqanaim Fields of Israel in the Eastern Mediterranean Basin. These fields lie onshore just southwest of the Dead Sea. Production here is from the Upper Jurassic Zohar, Kidod and Haqanaim formations, with a primary gas reservoir in the Zohar formation. Here most production is from limestones but there is a little production from dolomitic sandstones.

The book then changes location and there is a paper describing the Zdánice-Krystalinikum Fields of Czechslovakia. These fields have reservoirs in the Miocene and Precambrian. Production is from Miocene Carpathian sandstones which were deposited on the southwestern slope of a crystalline basement topographic high. There are also some production from Oligocene and Paleocene tectonically brecciated, weathered, and faulted basement rocks. There is also production from the Precambrian trapped in granodiorites, diorites, some quartz diorites, granites and granitic aplites.

Other traps described in the book include some from China at the Kelamayi Field in the Zhungeer Basin of China. Here the reservoirs include conglomerate, sandstone and dolomite with ages ranging through the Permian, Triassic, and Jurassic. This field is trapped by an unconformity which is truncated and onlaped, reverse faulted, and capped by an updip tar seal.

The book ends with descriptions of six fields are from Venezuela. These include: the Santa Rosa Field of the eastern Venezuela basin which is reservoired in distributary channel and mouth bar sandstones of Oligocene to Miocene ages; the Los Lanudos Field of Maracaibo basin

which is in an Eocene tidal flat sandstone, and carbonate; the Guafita Field from the Barinas-Apure basin with its reservoir in a Cretaceous and Oligcene aged sandstone; the Tarra Field of the Maracaibo basin in a Eocene and Cretaceous mixed sandstone and limestone from a fluvio-deltaic and shelf platform setting; the Lama Field of the Maracaibo basin in Cretaceous, Paleocene, Eocene, Oligocene and Miocene sandstones and limestones from a mixed fluvial-deltaic and marine platform setting; the Tiguaje Field of the Maracaibo/Falcón basin formed in middle Miocene aged sandstones, deposited in a coastal plain setting, and finally there is Yucal-Placer Field from the eastern Venezuela basin, Buárico subbasin. This field has sandstone reservoirs of Oilgocene to Cretaceous and lower Miocene ages which accumulated in largely marine bar, platform edge, slope settings.

This book matches the other treatise of petroleum geology. Once again the editors, Norman Foster and Edward Beaumont have set high standards for their contributors and produced a book illustrated by numerous cross-sections, seismic sections, well logs , maps of the fields, and photo-micro graphs, some of which are in color. This book is intended to provide a data set for the comparison with fields or locations that the reader might be working. The compilation of data from fields from all over the world of different structural or stratigraphic styles serves this purpose. This book and its companion volumes will help geologists in exploration for many years to come. AAPG should be once more congratulated on producing a fine book.