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Several of the Quaternary themes deserve further comment. Extensive multidisciplinary environmental investigations are now underway at Miramichi estuary in New Brunswick, but all five reports on this work are skimpy. Another coastal region receiving close attention is the Fraser River Delta tidal flat where aerial photography is being successfully used to map surficial sediments and identify historical changes in morphology. Characterisation of Quaternary terrestrial sediments by means of their magnetic properties is now a common practice that is producing important stratigraphic advances. Thus, tills in SE Alberta are readily differentiated by their respective magnetic susceptibility; late Quaternary sediments in Lake Ontario and Lake Erie can be broadly correlated by patterns of temporal variation in declination, inclination, and intensity, with the Erieau Excursion, which ended about 12,500 years ago, providing an extremely valuable marker; polarity measurements and faunal content of sediments in SW Saskatchewan suggest a timing of about two m.y.B.P. for inception of Laurentide glaciation there. Another significant development relevant to glaciation is the discovery that ice flow during the late Wisconsin was centripetal to the Gulf of St. Lawrence and that grounded glaciers did not fill it. The Magdalen Islands, therefore, probably escaped glaciation at this time.

The Best Paper Award goes to T. J Day and S. Beltaos for their comprehensive documentation of the dispersion of tracer mass in Lesser Slave River, Alberta.

MS received June 21, 1977.

Note

Dr D. J. McLaren, Director General, Geological Survey of Canada recently announced several changes in the branch's publication policy which are of interest to the Canadian geoscience community.

Beginning with Paper 78-1A the "Report of Activities" series will appear under the title "Current Research" to better reflect the nature of the papers that comprise the series. Papers will be separated into scientific and technical papers and scientific and technical notes. A discussion and communications section will also be added.

The addition of a "Discussion" section is especially welcome. The Geological Survey has always welcomed comments on the scientific content of its publication and this new section will make public discussion possible. There may also be those who wish to communicate new data or interpretations that would supplement the information released in GSC reports. Discussions will be limited to recent reports (not more than 2 years old). The section is designed to be a Forum For Discussion of scientific content of specific reports and general discussions on policy will not be accepted. Submissions may be made in either English or French and are not to exceed 1500 words. Only in exceptional cases will illustrations be accepted. Every effort will be made to publish both "Discussion" and "Reply" in the same issue. Submissions should be made to the Chief Scientific Editor, Geological Survey of Canada, 601 Booth St., Ottawa K1A OE8.

North American Oil and Gas Fields

Edited by Jules Braunstein
American Association of Petroleum Geologists Memoir 24, 360 p., 1976
AAPG and SEPM Members: $18.00
All Others: $22.00

Reviewed by J. S. Bell
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This is the latest volume of papers about oil and gas fields to be published by the American Association of Petroleum Geologists. It contains descriptions of seventeen fields in the United States and Canada, written by a total of twenty-nine authors. Although field descriptions of this type have long proved to be invaluable references for oil industry personnel, they have been largely ignored by many other earth scientists and teachers. This is unfortunate, because data from closely spaced wells in a developed field can give a level of stratigraphic and structural control rarely obtained from fieldwork in sedimentary rock successions.

This volume contains detailed reconstructions of paleodrainage systems, and the resulting sand dispersal patterns, in the Mitsue (Alberta), Piney-La Barge (Wyoming), East Cameron Block 270 (Offshore Louisiana) and Citronelle (Alabama) fields. The meandering channels containing the reservoir sandstones at Citronelle have been mapped in the kind of detail usually associated with fluvial geomorphology studies. Carbonate reservoirs are less well represented, although the successive stages in the growth of reef and off-reef facies at Fairway (Texas) are excellently documented. Many of the studies involved use mechanical log responses to augment paleofacies interpretations, and there are clear expositions of the approaches used at Mitsue, Wattenberg (Colorado) and Citronelle.

Much of the structural information given for the various fields is extemely valuable, based as it is on considerable well seismic data. Again, the three-dimensional structural control obtainable in heavily drilled subsurface situations will usually far exceed what can be inferred from surface outcrops. Confused fieldworkers can take heart from the 'illogical' opposed thrust sheets in the La Barge area of Wyoming, while the discussion of the origin of the Prudhoe Bay oilfield in Alaska shows how constructing fluid migration paths can aid in unravelling structural history. A paper on the Taglu gas field contains seismic reflection profiles and summary structural cross sections through surrounding areas of the Beaufort Basin. Together, they illustrate how mobile geopressured shales can deform an area, and the disconcertingly subtle interplay which exists in such provinces between subsidence, uplift and sediment loading.

In the Forward, Jules Braunstein indicates that the selection of fields discussed was based on their relative importance and the lack of adequate, readily available, descriptions. Also included is an index to those North American oil and gas fields which have been described in publications of the American Association of Petroleum Geologists. In other words, Memoir 24 is written primarily for the oil industry. Nevertheless, most earth scientists, and particularly those who teach, will find this type of compilation well worth

examining. Behind all the industry jargon and pay thickness maps, there are concise descriptions of well-documented, three-dimensional, configurations of sedimentary rock bodies which can be used both as classroom illustrations and to illuminate situations where there is less information.

MS received August 24, 1977.

Geological Studies on the COST No. B-2 Well, U.S. Mid-Atlantic Outer Continental Shelf Area

Edited by P. A. Scholle
United States Geological Survey Circular 750, 71p., 1976.
Free on application to Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, Virginia 22202, U.S.A.

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This excellent summary report provided up-to-date information on the stratigraphy of the Baltimore Canyon Basin on the United States Atlantic continental shelf. It is also a fine example of a frontier wildcat well evaluation report, and it gives readers a good appreciation of many of the approaches and analytical techniques currently used by the oil industry.

The COST No B-2 well was a stratigraphic test, drilled in a syncline, and deliberately intended to avoid hydrocarbon accumulations. It was drilled by the Continental Offshore Stratigraphic Test (COST) Group acting on behalf of thirty one petroleum companies who shared the expenses. COST No. B-2 is located adjacent the Baltimore Canyon exploration permits offered for leasing by the U.S. Federal Government on August 17, 1976. It was drilled to provide information on the area prior to the sale. This report is a preliminary summary of the well results.

COST No. B-2 bottomed 15,655 feet below the seafloor in Lower Cretaceous sediments and was located downdip of a major igneous intrusion-cored uplift that has become popularly known as the 'Great Stone Dome'. Various authors discuss the lithologies encountered, sandstone porosity and petrography, foraminiferal, nannofossil and palynomorph age dating, geothermal gradients, organic geochemistry and geophysics. The geochemical studies are of particular interest. They were aimed at establishing organic richness, hydrocarbon source rock type and degree of organic maturation. There is a good discussion of the types of measurements and analyses used to evaluate how much low grade metamorphism and organic diagenesis the rocks had undergone and whether they were capable of expelling hydrocarbons. A brief chapter on geophysics alludes to seismic stratigraphy as well as outlining of a shallow amplitude anomaly, or 'bright spot', west of the well.

Scholle summarises all this information and concludes that COST No. B-2 encountered good sandstone reservoirs above 10,000 feet, adequate sealing shales and good gas-prone source rocks. The level of organic metamorphism was relatively low, but probably just sufficient for gas generation at the base of the section. The remaining requirement for a hydrocarbon accumulation, namely a viable trap, naturally was not evaluated by this well.

U.S. Geological Survey Circular 750 can be obtained for the cost of a stamp and will enable readers to 'follow the play' as wells are drilled in the Baltimore Canyon basin. It is well worth the extravagance!

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Deserts of the World

By M. P. Petrov
Translated from the 1973 Russian edition by the Israel Program for Scientific Translation
New York, John Wiley and Sons, 447 p., 1976
$57.50

Reviewed by G. V. Middleton
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This volume is a comprehensive review of the geography of deserts. The first part (10 Chapters, 157 pages) gives maps and brief descriptions of the world's deserts, and closes with some comparisons and a new classification, based on climatic type, morphostructural criteria, nature of surficial materials (10 litho-edaphic types), and geomorphology (landscape types). The second part (3 Chapters, 184 pages) deals mainly with sandy deserts and considers what Bagnold called the physics of blown sand, environmental conditions (including the microclimatology and geochemistry of desert sands) and the adaptations of plants and animals to desert conditions. The third part (3 Chapters, 69 pages) gives a brief review of the natural resources of deserts, and the problems and probable future progress of exploitation and development of desert regions.

For the geologist, the main parts of the book likely to be of interest are the description of deserts, particularly those in Asia (2 maps show the main features of the deserts of Central Asia - China Mongolia - and Middle Asia - southeastern USSR), and the general discussion of sand deserts given in Part II. Comparison may be made with the book *Geomorphology in Deserts* by R. U Cooke and A. Warren (London, B. T. Batsford, Ltd., 1973) and *Desert Sedimentary Environments* by K. W. Glennie (Amsterdam, Elsevier Publ. Co., 1970). These two works are more restricted in scope: Glennie's book is about sediments found in deserts, and is based very largely on the author's experience in the Arabian Peninsula;