MEETINGS

DINNER MEETING—APRIL 11, 1988

ROBERT EVANS—Biographical Sketch

Robert Evans is currently a Research Associate with Mobil Research and Development Corporation, in Dallas, Texas. He was born and grew up in England, and has lived, was educated, and worked in England, Nova Scotia, and the United States. He received his B.S. (in Geology and Education) from Nottingham University; his M.S. (Geology) from Dalhousie University, Nova Scotia; and his Ph.D. (Geology) from the University of Kansas (1972). His principal field of specialization, the geology of evaporites, resulted in the publishing of *Marine Evaporites* with D. W. Kirkland in 1973. His other publications include articles on sedimentation, diagenesis, structural deformation, chemistry, and the relationship of sedimentation to plate tectonics.

Delhousie and Kansas Universities have bestowed many honors and awards upon him, and he has served as an AAPG Distinguished Lecturer. His self-styled "lifelong passions", along with geology, are the sport of soccer and writing.

Robert began his employment with Mobil Oil Corporation in 1969, in both research and exploration assignments. He is currently working on hydrocarbon migration, salt-dome growth, and 4-D interrelationships of geologic processes.

PATHWAYS OF HYDROCARBON MIGRATION IN THE SOUTH MISSISSIPPI SALT BASIN: GEOLOGICAL DEDUCTION— GEOCHEMICAL CONFIRMATION

The South Mississippi Salt Basin is one of the three interior basins of the Gulf Coast region of the United States characterized by structures formed by movement of late Jurassic Louann Salt. An analysis of pathways of migration within the basin has revealed that it is possible to explain why hydrocarbons have accumulated in some structures, yet are absent from others that would appear to be favorable. Of the more than 840 fields within the basin, 74, including the largest known accumulations, have hydrocarbons stacked in reservoirs in more than one formation. These stacked reservoirs result from vertical migration brought about by faulting. More than 750 fields have hydrocarbons confined to one formation in traps associated with four distinct trends of production that decrease in age systematically from the margin of the basin into the interior. The hydrocarbons in these trends have accumulated by intrastratal migration, without the agency of faulting, from a nearby source in the same unit as the reservoir. On the northwest side of the basin, migration between units brought into contact along unconformities has resulted in ten fields. Vertical migration brought about by faulting around shallow salt diapirs has allowed hydrocarbons to escape, so that only 5 of 56 such structures have ever produced oil or gas. These conclusions, based only on geological deductions, have been confirmed by geochemical analysis of the hydrocarbons. The products from each of the sources are chemically distinct, and oil from the deepest source, the Smackover formation, can be recognized in reservoirs many thousands of feet higher in the Cretaceous section. ■