

EVENING MEETING—JANUARY 12, 1981

ROBERT EVANS—Biographical Sketch



Robert Evans was born in Tidworth, England. He received a B.S. in geology (1962) and a Certificate in Education (1963) from the University of Nottingham. In 1965 he received his M.S. in geology from Dalhousie University, and in 1972 he received his Ph.D. in geology from the University of Kansas.

From 1963 to 1969, Dr. Evans worked for Nova Scotia Research Foundation, Manitoba Mines Branch, and TexasGulf Sulphur (summer employment). He has been associated with Mobil since 1969, when he went to work as a research geologist for Mobil Field Research Laboratory, where he was involved with projects on plate tectonics, evaporites, carbonates, and geochemistry. In 1976 he became a geological specialist for Mobil Exploration and Producing Services, and from 1979 to the present he has been involved in regional studies of uranium occurrence for Mobil Energy Minerals Special Projects.

Dr. Evans has many publications to his credit, including several on evaporites. He and D. W. Kirkland were co-editors of a volume on *Marine Evaporites*, published in 1973 by Dowden, Hutchinson and Ross.

POTENTIAL OF THE EVAPORITIC ENVIRONMENT AS A SOURCE OF PETROLEUM (Abstract)

Examination of modern saline lakes, solar evaporation ponds, and lagoons shows that the evaporitic environment can be very productive of organic matter. Few species survive in the brines, but those that do commonly are present in great profusion. In a marine evaporitic embayment, the flow of surface currents is persistently toward regions of highest salinity, so that a continual supply and concentration of nutrients exist. Prolific growth of phytoplankton may be similar to that in areas of upwelling in modern oceans.

Only carbonates precipitate in the "mesosaline" part (4-12% salinity) of such an evaporitic environment, and no great dilution of organic matter by clastic or biogenic sediments occurs. Because stratification of brine may occur and reducing conditions may be associated with the bottom waters, much of the organic matter can be preserved. Maturation may produce a rich carbonate source rock, commonly unrecognized in the geologic column.

In the Middle East, mesosaline conditions occurred many times from the Triassic to the Cretaceous; they may be responsible for the vast reserves of petroleum in the area. Evaporitic conditions may also have played a part in the petroleum productivity of many other areas, including the Michigan and Paradox basins.

(NOTE: This paper was co-authored with Douglas W. Kirkland, Mobil Research and Development Corp.)