INTERNATIONAL EXPLORATIONISTS GROUP EVENING MEETING OCTOBER 21, 1987

JAMES LEE WILSON—Biographical Sketch

James Lee Wilson was born in Waxahachie, Texas. He attended Rice University and the University of Texas, where he received his B.S. and M.A. degrees in 1942 and 1944. He received his Ph. D. from Yale University in 1949 after serving two years in the U.S. Army.

Dr. Wilson's experience includes that of a field geologist in the Rocky Mountains, Associate Professor at the University of Texas at Austin (1949-1952) and a research geologist for Shell Development Company in Houston, Texas (1952-1963). He spent three years in the Netherlands working on the Mesozoic geology of the Middle East.

In 1966 Dr. Wilson joined Rice University as a geology professor. He was appointed to the Harry Carothers Wiess Chair of Geology in 1972 and became Chairman of the geology department in 1974.

Dr. Wilson was President of the SEPM from 1975-1976 and became an Honorary Member in 1980. In 1975 he completed a book entitled *Carbonate Facies in Geologic History* (Springer-Verlag). He is a member of numerous geological societies and participates in carbonate field and lecture courses with the Laboratory of Comparative Sedimentology of Miami University, Florida, ERICO of London, the University of Houston, and the AAPG. Field experience includes work in Mexico, New Mexico, North Africa, the Rocky Mountains, the Austro-alpine area and the Middle East.

Dr. Wilson joined the geology faculty at the University of Michigan, Ann Arbor in 1979, and retired from the university in 1985. Dr. Wilson is now Professor Emeritus at the University of Michigan and professor at Rice University, Houston. He resides in New Braunfels, Texas, and is currently studying the geology of northern Mexico and carbonate platforms worldwide.

CONTROLS ON CARBONATE PLATFORM-BASIN SYSTEMS

Carbonate ramps and platforms grow out from mildly uplifted areas located in clear, warm, marine environments. The carbonate shelf quickly evolves a rim because of rapid carbonate sedimentation off the flanks of the uplift. The result is a wide spectrum of carbonate facies, documented in the modern Bahamas Banks, Persian-Arabian Gulf and the geologic record. Regularity and width of facies belts are controlled by steepness of the margin, tectonic and oceanographic factors, and the organic evolution of framework constructors through geologic time. Sea level fluctuations play a major role in platform stabilization, maintenance, and porosity development.

Trends and orientation of platforms are controlled by tectonic framework. Elongate buildups may form parallel to subsiding passive cratonal margins, or platforms may develop over and around equidimensional fault blocks along the borders. Isolated and steep buildups often rise from previously formed low relief, wide platforms. Narrow platform rims may evolve around major subsiding basins.

The southwestern border of the North American craton rifted extensively in Late Paleozoic time in northern Mexico, Arizona, New Mexico and west Texas. A series of open marine limestones of Pennsylvanian age developed on the edges of many of these northwest-directed horst blocks. Platform rims composed of phylloid algal detritus developed around some of the basins. The great Permian reef complex around the Delaware basin evolved at the end of the Paleozoic. These rimmed platforms developed when there were no large reef frame constructors and responded to dual factors of tectonic subsidence, high organic productivity, and binding-stabilization on its margin.

When the Gulf of Mexico opened in early Mesozoic time, extensive, left-lateral, northwest-directed rifting occurred through eastern Mexico. A prominent series of blocks and intervening basins developed. The resulting graben topography filled with Liassic redbeds and arkose, evaporites in Middle Jurassic, and, surrounding some uplifts, Late Jurassic basinal evaporites and oolitic grainstones. The tectonic blocks partly controlled development of Cretaceous rimmed platforms as they responded to renewed subsidence and development of organic framework corals and rudist bivalves. Jurassic oolite, Cretaceous reefs, and forereef debris furnished good reservoir rock for the large oil fields of central Mexico. The Mesozoic of Mexico is a model for predicting trends of carbonate reservoir development in North Africa and the Middle East.