EVENING MEETING—SEPTEMBER 10, 1979

AMOS SALVADOR—Biographical Sketch

Amos Salvador is Chief Geologist of Exxon Company, U.S.A. He received a B.S. degree in Geology from the Universidad Central de Venezuela in 1945 and a Ph.D. degree, also in Geology, from Stanford University in 1950. He began his professional career with Mene Grande Oil Co., a Gulf Oil Corp. Venezuelan affiliate and, after graduating from Stanford, worked for Gulf's Foreign Production Division in connection with exploration ventures in various countries of North Africa, Europe and South America.

He began his association with Exxon (then Standard Oil of New Jersey) in 1955 when he joined Creole Petroleum Corp. in Venezuela. Since then he has held a number of professional and managerial positions both in operations and in research: Vice President of Exploration Research, Jersey Production Research Co., Tulsa (1962-1963); Manager of the Geological Department, Creole Petroleum Corp., Caracas (1963-1966); Assistant Chief Geologist, Humble Oil & Refining Co., Houston (1966-1967); Exploration Manager, Gulf Coast Division, Humble Oil & Refining Co., Houston (1967-1970); Executive Vice President, Esso Production Research Co., Houston (1970-1972); and Chief Geologist, Exxon Company, U.S.A., Houston (1972-present).

His professional affiliations include membership in AAPG, GSA, and HGS. He is also a member of the IUGS International Commission on Stratigraphy and Chairman of its International Subcommission on Stratigraphic Classification. He is the author of a number of publications in the fields of stratigraphy and petroleum geology.

LATE TRIASSIC-JURASSIC PALEOGEOGRAPHY AND THE ORIGIN OF THE GULF OF MEXICO (Abstract)

The basic structural and stratigraphic framework of the Gulf of Mexico was established by events that took place during the Late Triassic and the Jurassic. Cretaceous and Tertiary events only accentuated and modified this framework. During the Late Triassic and Early Jurassic, continental conditions prevailed over most of the southern part of the North American Plate. Marine deposition was restricted to parts of western and central Mexico that were covered by embayments of the Pacific Ocean. As the North American Plate started to separate from the South American and African plates, tensional grabens began to form in the area. They were filled with red beds and volcanics.

It was not until late in the Middle Jurassic (Callovian) that Pacific marine waters began to reach the Gulf of Mexico area across central Mexico. They intermittently flooded the preexisting grabens and, between floods, evaporated to produce extensive salt deposits (Louann Salt). The salt varied markedly in thickness according to the rate of subsidence in the grabens. Little or no salt was formed in the intervening high areas. During the Late Jurassic, Pacific marine waters progressively covered an increasingly large part of the Gulf of Mexico and surrounding areas as a result of continued subsidence, sea-level rise, or both. Connection with the Atlantic, however, was not established until late Kimmeridgian or Tithonian time.

On the basis of this paleogeographic data, it is possible to speculate that in late Triassic and early Jurassic the "Yucatan Continental Block" was located roughly 300 kms to the NNW of its present position, a part of the large continental mass forming the southern part of the North American Plate. As the North American Plate began to drift northwestward the "Yucatan Block" seems to have been "left behind." The separation of the "Yucatan Block" from the main North American Plate probably started in the late Triassic, continued slowly and sporadically during the early and middle Jurassic, and quickened after the formation of the extensive Callovian salt deposits. By the close of the Oxfordian the "Yucatan Block" had reached essentially its present position, and the Gulf of Mexico had been born.