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ASSOCIATION ROUND TABLE

24th ANNUAL MEETING GULF COAST ASSOCIATION OF GEOLOGICAL SOCIETIES (GULF COAST SECTION OF AAPG) and SOCIETY OF ECONOMIC PALEONTOLOGISTS AND MINERALOGISTS (GULF COAST SECTION)

Lafayette, Louisiana October 16-18, 1974

KEYNOTE ADDRESS

Morgan J. Davis: The energy crunch is not over

FIELD TRIPS

Field Trip 1. Avery Island Salt Mine, Louisiana: 1-day trip, Saturday, October 19, to observe the interior of the salt dome and structures. Limited to 40 persons. Approximate cost $10.00.

Field Trip 2. A plane flight over the recent sediments of south-central Louisiana, in specific, to view the Atchafalaya basin, Chenier trend, and Five Island salt domes. Three flights per day, limited to 14 persons per trip. Approximate cost $20.00.

Field Trip 3. SEPM-GCAGS Convention Trip—Guatemala Field Trip, October 19-23, 1974.

This trip will be limited to 32 participants. However, some persons may wish to travel as part of our group in order to take advantage of group-rate air fares, yet not be able to attend the field trip itself. We are reserving extra aircraft seats with this in mind.

Archeological part of trip will be to Tikal, largest of the ancient Mayan cities.

Geologic part of trip will be to examine Cretaceous and younger sedimentary rocks of Guatemala City and vicinity, extending into the Motagua fault zone. H. H. Wilson will lead this excursion.

Participants will fly from New Orleans International Airport (Moisont) on Saturday around noon and return about the same time the following Wednesday. All accommodations will be for double occupancy.

It is assumed that some participants will wish to spend vacation time in Guatemala, and air space is reserved for a part of the group to return at the end of two weeks (November 2, 1974). In order to do this and still obtain group rate fares, at least 10 persons must select this option.

Guatemala is a strikingly beautiful country. Prices of rooms and meals are about half of comparable U.S. prices. The capital is a thoroughly modern international city, comparable to Paris, London, or Mexico City. The more remote parts of the country are virtually unchanged from Pre-Columbian times and primitive in the extreme. Climate in the highlands is spring-like all year. The coastal areas (Pacific and Caribbean) are warm and tropical.

Approximate cost to participants is $275.00; for wife (covers only transportation), $125.00.

ABSTRACTS OF PAPERS

ACHAUER, C. W., Atlantic Richfield Co., Dallas, Tex.

Deposition and Diagenesis of James Limestone (Early Cretaceous) in East Texas Basin

Northeast-trending facies of the James Limestone of the East Texas basin reflect three depositional settings. From northwest to southeast they include (1) an area of quartz-sandstone deposition, most of which can be inferred to be of continental origin, (2) a reef and skeletal-oolitic grainstone belt that formed under high-energy conditions in nearshore shallow water, and (3) a broad area of open-marine shelf on which argillaceous lime mudstone and calcareous shales formed under relatively quiet-water conditions.

Three depositional trends and their associated carbonate bodies can be differentiated in the reef and carbonate grainstone belt. One is an east-northeast-trending oolitic grainstone ridge of "dune" which can be mapped for at least 30 mi. A second is marked by northwest trending rudistid-reef complexes, one of which forms a conspicuous salient projecting southeastward from the main grainstone belt (Fairway reef) and another within the main grainstone belt (Quitman reef). The third depositional trend is also in the northwest and is seen as very large skeletal-oolitic grainstone bars separated from one another by channels. The northwest-trending channels, reefs, and oolitic grainstone bars strongly suggest that tidal currents from the ancestral Gulf in the southeast played an important role in the deposition of the James reef and grainstone belt.

Porosity and permeability distribution within the reef and grainstone belt were controlled profoundly by a sequence of three diagenetic events. In the first event, subaerial exposure of the reef and grainstone belt shortly after deposition resulted in the development of solution or moldic porosity and the precipitation of an iron-free calcite cement. Maximum development of solution or moldic porosity is in the thickest reef and oolitic buildups indicating that (a) areas of higher relief played an important role in the gathering and movement of meteoric water, and (b) areas of higher relief contained enough unstable carbonate (probably aragonite) so that the solution by meteoric water was maximized. Although a calcite cement was precipitated during this first diagenetic event, it did not seriously occlude void space and, therefore, did not significantly lower porosity and permeability.

In contrast to the first diagenetic event, a second event of ferroan calcite cementation and a third event of ferroan dolomite cementation resulted in widespread elimination of porosity and permeability, especially in areas between the thickest carbonate buildups and in limited zones within the carbonate buildups. The textural relations of these second and third cements clearly indicate that they were precipitated some time following subaerial exposure and prior to migration of hydrocarbons into the producing reservoirs. However, fundamental problems remain, the foremost of which is the determination of the source, or perhaps sources, of the fluids from which the cements were precipitated.

ALANIZ, R. T., Amoco Production Co., Houston, Tex., and R. H. GOODWIN, Texas Christian Univ., Dept. of Geology, Fort Worth, Tex.

Recent Sediments of Hypersaline Estuarine Bay

Cayo del Grullo is a hypersaline estuarine bay on the south Texas Gulf Coast. Most surficial sediment is mud, with sand predominating around the periphery of the bay. Influx of sediment is small and distribution of the several lithofacies and biofacies within the bay is related directly to the prevailing energy conditions. The mud comes from several sources, from Laguna Madre, from erosion of surrounding Pleistocene bluffs, and from intermittent streams during heavy rains. Organic content of bottom sediments is inversely proportional to grain size. Oolitic aragonitic sands are present in the bay and are more extensive than previously reported. Oolitic grains are precipitated and deposited in the high-energy swash zone. Other carbonate material