24. Late Quaternary Geology of Sabine Lake and Vicinity, Henry E. Kane
25. Chenier Plain and Its Stratigraphy, Southwestern Louisiana, J. V. Byrne, D. O. LeRoy, and Charles M. Riley
26. Geologic History of Chenier Plain, Southwestern Louisiana, H. R. Gould and E. McFarlan, Jr.
27. Size, Sorting, Mineralogy, and Chemical Composition of Recent Sands of Northern Gulf Coast, K. Jinghwa Hsu
28. Petrology of Anacacho Limestone of Southwest Texas, L. L. Harvill

ABSTRACTS

1. Gulf Coast Cenozoic History, J. D. M. Williamson, Trunkline Gas Company, Houston, Texas.

Isopach maps of the Wilcox, Claiborne, Jackson, and total Eocene; of the Vicksburg, Frio-Anahuac, and total Oligocene; and of the Miocene-to-Recent; projected speculatively beyond well control, indicate that the Cenozoic sediments reach thicknesses of 45,000 feet off the South Texas Coast and 35,000 feet just west of the Mississippi River delta in Louisiana. Thickest deposition took place in Texas during the Paleogene, shifting to Louisiana in the Neogene. Cross sections, projected beyond well data into the Gulf of Mexico by the isopachs, show the form of the Gulf Coast geosyncline.

The Cenozoic history of the Gulf Coast is essentially a conflict between land and sea for possession of the area of the present Coastal Plain. Along the northern and western sides of the Gulf of Mexico, with which this paper is principally concerned, ample supplies of mud and sand have been available to build out the continent, with many interruptions by invasions of marine waters. The character of the sedimentary units which have been isopached are controlled in large part by the sequence of marine transgressions and regressions. The intricate sedimentary patterns produced by these repeated oscillations have provided unlimited variations in stratigraphic conditions for trapping oil and gas.

The contact of Neogene on Paleogene is placed *in* the Oligocene at the base of the *Nodosaria blanpiedi* zone because an unconformity here appears to be the most centrally located and extensive in the transitional wedge of Frio sediments.

2. Occurrence of Miocene Oil in South Louisiana, Leonard L. Limes and Jack C. Stipe, Kerr-McGee Oil Industries, New Orleans, Louisiana.

Miocene sediments have yielded more than 3 billion barrels of oil from approximately 380 fields along the Louisiana Gulf Coast. Favorable sedimentary circumstances combine with a variety of structures to provide excellent conditions for accumulation.

The Miocene section is divisible into biostratigraphic units. Each unit possesses three distinct facies: updip a continental and near-shore massive sand facies, farther south an intermediate facies of alternating sands and marine shales, and downdip a deep-water facies of predominantly dark marine shales. Each biostratigraphic unit thickens downdip, the most pronounced thickening taking place seaward of the "hinge line" which separated the continental shelf and the continental slope at the time of deposition.

The Miocene strata dip regionally southward into the Gulf Coast geosyncline. Regional dip increases with depth to more than 800 feet per mile. It is interrupted by piercement salt domes, nonpiercement or deep-seated salt domes, residual highs, and normal faults, all of which are related directly or indirectly to the plastic flow of sediments under gravity forces.

The Miocene sediments produce oil and gas in a belt basinward from the older Eocene and Oligocene producing trends. Within the subdivisions of the Miocene the production shifts to the south and east as the producing unit becomes younger. Most of the reservoirs are in the intermediate facies of alternating sand and marine shale. The stage of development of Miocene production becomes increasingly youthful toward the coast line and into the offshore province, which represents one of the largest concentrations of undrilled reserves in the world.

3. Frio Formation of Upper Texas Gulf Coast, Houston Geological Society Study Group Report, L. Bruce Forney, Chairman, P. R. Rutherford Company, Houston, Texas.

A study group of the Houston Geological Society has concerned itself with the Tertiary Frio formation as it exists in the subsurface in the area from Jackson County, Texas, to Louisiana. To facilitate study, the formation was divided into upper and lower units and each was traced over the area of interest by means of electrical log characteristics. An electrical log correlation point in the *Marginulina* zone of the overlying Anahuac formation was used as a practical expedient for the "top" of the Frio. A horizon near the *Nodosaria blanpiedi* faunal zone in the middle of the Frio served as the top of the lower Frio unit. No specific electrical log datum was used for the base of the Frio.

The number of feet of porous and permeable sand within each unit was counted from the electrical