SEPM TECHNICAL PROGRAM SUMMARY

THURSDAY AFTERNOON, OCTOBER 24 (Green Room, 2:00 P.M.–5:30 P.M.)

Presiding: BEN PETRUSEK, President, GCS-SEPM; HERBERT ELLIOT, Treasurer, GCS-SEPM; and HUBERT C. SKINNER, Past-President, GCS-SEPM

1. LOUIS DE A. GIMBREDE: *Aturia alabamensis* (Morton) in Jackson beds at Creola Bluff, Montgomery, Louisiana
2. CLYDE H. MOORE, JR.: Factors controlling carbonate sand distribution in shallow shelf environment: illustrated by Texas Cretaceous
3. ROGER JAHNKE: Sinkhole prediction
4. JAMES A. WOLLEBEN: Statistical biostratigraphic correlation and Senonian stratigraphy in West Texas and northeastern Chihuahua, Mexico
5. L. GIFFORD KESSLER II: Palynomorph distribution and depositional environments in Glen Rose Formation (Lower Cretaceous), Somervell County, Texas
6. MURIEL E. HUNTER: Molluscan guide fossils in late Miocene sediments of southern Florida
7. WALTER H. TRENCHARD: Sedimentation and distribution of marine biofacies

FRIDAY MORNING, OCTOBER 25 (Green Room, 9:00 A.M.–12:00 NOON)

Presiding: DAN R. MCGREGOR, Vice-President, GCS-SEPM, and GARRETT BRIGGS, Secretary, GCS-SEPM

8. *C. JOHN MANN, WILLIAM A. THOMAS: Ancient Mississippi River
9. C. JOHN MANN: Illinois basin, Mississippi embayment, and Ouachita orogenic belt
10. JOHN H. BEARD, *JAMES L. LAMB: Lower limit of Pliocene and Pleistocene in Caribbean and Gulf of Mexico

* Speaker.

ABSTRACTS OF PAPERS

(In order of presentation)

LOUIS DE A. GIMBREDE, Univ. of Southwestern Louisiana, Lafayette, La.

Aturia alabamensis (MORTON) IN JACKSON BEDS AT CREOLA BLUFF, MONTGOMERY, LOUISIANA

A single specimen of *Aturia alabamensis* was found in the lower Yazoo Clay or upper Moodys Branch Marl at Creola Bluff on the Red River at Montgomery, Louisiana. Other reports of the presence of this species at various localities in the Gulf Coast region emphasize the anomalous absence of this species from equivalent age beds in the Louisiana-Texas area. The scarcity of this pelagic animal in the above lithologic units suggests possible ecologic implications.

CLYDE H. MOORE, JR., Louisiana State Univ., Baton Rouge, La.

FACTORS CONTROLLING CARBONATE SAND DISTRIBUTION IN SHALLOW SHELF ENVIRONMENT: ILLUSTRATED BY TEXAS CRETACEOUS

Carbonate sandstone bodies, attractive petroleum reservoirs, are present in significant concentrations adjacent to the shelf edge, at the shoreline, and associated with reef development. On the basis of the writer's studies of the Lower Cretaceous carbonate sequences in Texas, this paper outlines conditions whereby significant deposits of carbonate sand can be concentrated in the shallow-shelf environment, an area usually characterized by the deposition of fine-grained carbonate mud and silt.

Three conditions must be met before carbonate sands can be deposited: (1) grains must be available; (2) high energy must be present to winnow the "fines" and concentrate the coarser grains; and (3) high-energy conditions must persist long enough to concentrate the sands. The first condition is easily met because of abundant fossil or biogenic material.

The shallow shelf generally is a low-energy environment, therefore, the problem is to find a situation where high-energy conditions persist long enough to concentrate significant deposits of coarse-grained material.

The most obvious high-energy situation occurs during a marine transgression across the shelf, but Texas Lower Cretaceous sequences indicate that transgressive deposits generally are deeper water, muddy sediments.

In a regressive situation the high-energy zone shifts in front of the zone of concentration toward the shelf edge, allowing previously deposited sands to be preserved. The potential for widespread carbonate sand in the regressive phase is borne out by the presence of widespread, blanket, carbonate sandstones in Lower Cretaceous regressive sequences.

Structural elements within the shelf tend to influence bottom topography for a long time, and positive features become the site of relatively high energy and of the deposition of carbonate sand bodies surrounded by fine-grained carbonate sediments. Structural control of carbonate-sand deposition is illustrated by Lower Cretaceous Fredericksburg linear carbonate sandstone bodies coincident with the San Marcos and Concho arches in Central and West Texas.

ROGER JAHNKE, Mobil Chemical Co., Mulberry, Florida

SINKHOLE PREDICTION

Important sinkhole activity accompanied the spring drought of 1967 in central Florida. Several sinkholes developed in a large subdivision near Bartow, Florida. Mobil Chemical Company, and other phosphate companies in the area cooperated with local officials to make test corings near unaffected houses in an attempt to predict any further sinkhole activity. The writer conducted Mobil's drilling program and found a relation between surface subsidence and large basin-shaped structures on the bedrock surface. Evidence was used to advise homeowners of possible future sinkhole development under their homes.

JAMES A. WOLLEBEN, Louisiana State Univ., New Orleans, La.

STATISTICAL BIOSTRATIGRAPHIC CORRELATION AND SENONIAN STRATIGRAPHY IN WEST TEXAS AND NORTHEASTERN CHIHUAHUA, MEXICO

Upper Cretaceous rocks in West Texas and northeastern Chihuahua, Mexico, are divided into the Ojinaga, San Carlos, and El Picaco Formations.

A quantitative zonation based on morphologic changes in stratigraphically successive *Placenticeras* samples is proposed to supplement the established Upper Cretaceous collignonicerid zonation. The correlation coefficients of eight stratigraphically unrelated samples are compared statistically with the established