

16TH ANNUAL MEETING OF GULF COAST ASSOCIATION OF GEOLOGICAL SOCIETIES
AND
REGIONAL MEETING OF THE AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

Lafayette, La., October 26-28, 1966

GENERAL

Lafayette, Louisiana, will be host city for the 16th annual meeting of the Gulf Coast Association of Geological Societies, October 26-28. Convention headquarters is the Lafayette Municipal Auditorium, located next to the Oil Center Complex. The Municipal Auditorium will be the site of technical sessions, exhibits, registration, and most of the social events.

The technical program includes a variety of subregional, structural, and ecological studies representative of virtually the entire Gulf Coast area. In addition to the general program, a separate S.E.P.M. Symposium will be held during one of the technical sessions.

The Honorable John J. McKeithen, Governor of Louisiana, will give the opening address. Governor McKeithen will be introduced by The Honorable J. Rayburn Bertrand, Mayor of the city of Lafayette. Presiding will be Allen M. Borland, current president of the G.C.A.G.S. Robert Copeland is general chairman of the convention.

Entertainment for the convention includes a cocktail party Wednesday evening, a dance Thursday evening, and a shrimp boil Friday night. Women's activities, planned by Mrs. E. Holmes Smart, Jr., chairman, are a fashion show and luncheon Thursday and a milk-punch brunch Friday morning. Information pertaining to nearby *Ante-Bellum* homes and historical and Acadian cultural sites is available to those interested.

FIELD TRIPS

Field trips for interested parties will be conducted October 27, 28, and 29. A flying field trip of south-central Louisiana will be conducted Thursday and Friday. Two flights of 14 passengers each are planned for both the mornings and afternoons. A field trip Saturday, October 29, to Belle Isle Dome will include a tour of the salt mine. Forty reservations are available for this trip.

ABSTRACTS OF PAPERS

(In Order of Presentation)

1. FRANK W. HARRISON, Consultant, Lafayette, La., AND ROBERT A. ANDERSON, Glasscock-Chapman, Inc., Lafayette, La.

SUB-REGIONAL REPORT OF *Camerina* ZONE, SOUTHWEST LOUISIANA

A detailed subsurface evaluation of the *Camerina* Zone in the Maurice field area reveals a marked similarity with the environment of deposition of these sediments in the Lake Arthur depocenter. A stratigraphic analysis of the two areas was selected for study because each is characterized by the processes which provide a geological framework for the development of other local embayments in the subsurface of south Louisiana.

Correlation sections were prepared to illustrate the influence of growth faulting on the development of the sediments in each area. The effect of this fault system is further supported by isopachous maps of the *Heterostegina* "lime"—*Camerina* interval and the *Camerina-Miogypsinoides* Sand interval. Each dis-

plays a pronounced thickening of section on the downthrown sides of the faults relative to a corresponding section on the upthrown side. In addition, a marked increase in the number of discrete sandstone bodies occurs on the coastal sides of these south-dipping fault systems, as illustrated on a sandstone-distribution map of the *Camerina* interval.

The regional *Camerina* subsurface interpretation affords a comparison of the basic structural patterns in the Lake Arthur and Maurice depocenters, and shows the relations between the growth faults which affect the two areas.

Significant gas reserves recently have been discovered in the *Miogypsinoides* Sand of the *Camerina* Zone at Maurice field. A detailed subsurface map of this area is presented to evaluate further the extent and nature of local structure in this interval and its relative importance in the regional trend.

2. WILLIAM POPE WILBERT, Louisiana State University at New Orleans, New Orleans, La.
STRATIGRAPHY OF GEORGETOWN FORMATION, CENTRAL TEXAS

The Cretaceous Georgetown Formation is composed of irregularly interbedded fossiliferous micrite (microcrystalline limestone) and marl beds that are profusely burrowed. Beds can be recognized through great distances and are practically synchronous throughout their lateral extent, at least in the area of this report.

The Georgetown Formation is divisible into five members. They are, in ascending order, the Duck Creek, Fort Worth, Denton, Weno, and Main Street Members. The members are lithologically consistent throughout northern Travis County and Williamson and Bell Counties, Texas; the members maintain an almost constant thickness, except that the upper two members thin slightly southward. The formation is approximately 95 ft. thick in northernmost Bell County and approximately 70 ft. thick at Austin, central Travis County; 75% of this southward thinning is in the Weno and Main Street Members.

The Georgetown conformably overlies the Kiamichi Formation in the area of the Round Rock syncline; it disconformably overlies the Edwards Formation above the Belton high and on the northeastern flank of the San Marcos arch. The Georgetown is overlain conformably by the Del Rio Formation. Deposition was continuous throughout the time of accumulation of the Georgetown Formation, except for the minor interruptions that produced bedding planes.

The Georgetown was deposited in an environment that contained abundant life and where no coarse terrigenous debris was deposited.

3. R. O. STEINHOFF, Tulane University, New Orleans, La.
GEOLOGY OF SOUTH BOSCO-DUSON-RIDGE AREA, ACADIA AND LAFAYETTE PARISHES, LOUISIANA

The South Bosco-Duson-Ridge fields area is in the Oligocene and Miocene oil- and gas-producing trends of Acadia and Lafayette Parishes, Louisiana. In wells drilled to sufficient depth, three facies were found:

(1) a Pliocene and Miocene nearshore to continental massive sandstone facies; (2) an early Miocene and Oligocene continental-shelf facies of alternating sandstone and shale; and (3) a thick bathyal shale facies of Oligocene age. Oil and gas production in the area is confined almost entirely to sandstone beds in the continental-shelf facies.

South Bosco-Duson-Ridge fields are on a faulted, elongated north-south anticline that trends normal to the regional stratigraphic strike. All faults are normal and are either down-to-the-basin or up-to-the-basin. The down-to-the-basin faults are regional and are parallel with the regional stratigraphic strike. The up-to-the-basin faults are compensating faults confined to the South Bosco-Duson-Ridge complex. The fault throw generally increases with depth. All the faults "die out" upward in the section in or before reaching early Miocene sedimentary rocks.

Strata thicken into the downthrown sides of the faults and thin toward the crest and over the highest parts of the structure. The amounts of thickening or thinning generally increase with depth. Thus, fault movement and anticlinal folding were contemporaneous with sedimentation, continuously from Oligocene into Miocene time, and were most intense during Oligocene time.

The South Bosco-Duson-Ridge structure probably originated from faulting and anticlinal folding on the continental slope during Oligocene time. Structural growth was greatest where the structure was in the unstable environment of the hinge line (or shelf edge). Structural activity continued during the deposition of the neritic sediments of the Oligocene and early Miocene but at a steadily reduced rate. The structure was buried by a great thickness of nearshore and continental massive sandstone beds during Miocene and Pliocene time.

4. EDWARD D. MINIHAN, E. L. Erickson Co., Jackson, Miss., AND MARVIN L. OXLEY, Lone Star Producing Co., Jackson, Miss.
PRE-CRETACEOUS GEOLOGY OF POOL CREEK FIELD, JONES COUNTY, MISSISSIPPI

Commercial production from the Jurassic Cotton Valley and Smackover and pre-Smackover shows at Pool Creek represent a new era in exploration for the state. Thick multiple pays, high production rates, large reserves per well, and better spacing regulations offer oil hunters new incentives for deeper drilling. Knowledge gained from the study of this field will aid materially in the search for other Jurassic prospects.

Pool Creek is an intermediate-type salt dome overlain by a complexly faulted graben. Prior to the discovery of Jurassic production, the Cretaceous geology was well defined and used to help predict the presence of the older and deeper structure. Upper Cotton Valley sandstone beds rest unconformably on an eroded Smackover surface. At Pool Creek, depositional environment, length of erosional period, and time of salt movement are the controlling factors for accumulation.

5. MAX BORNHAUSER, Dillard-Waltermire, Inc., Houston, Tex.
MARINE UNCONFORMITIES IN NORTHWESTERN GULF COAST

The marine unconformities occurring in the northwestern Gulf Coast region are classified into: (1) non-deposition unconformities (parallel unconformities); (2) truncation unconformities (angular uncon-

formities); and (3) excavation unconformities (scour-and-fill unconformities).

This classification is applied to the unconformities already reported in Gulf Coast literature; additional examples of unconformities are described and illustrated from western Madison and central Orange Counties, Texas.

6. HUBERT C. SKINNER, Tulane University, New Orleans, La.
MODERN PALEOECOLOGICAL TECHNIQUES: AN EVALUATION OF ROLE OF PALEOECOLOGY IN GULF COAST EXPLORATION

In recent years there has been a great increase in interest in ecology and paleoecology and in the use of paleoecological data to define ancient environments. This is true especially in the petroleum industry where success in exploration is dependent upon the accurate correlation of strata. During the last 2-3 decades, several hundred papers dealing with this subject have been published, creating a formidable mass of paleoecological literature.

The historical background of paleoecological study is reviewed. The basic principles, the limitations of paleoecology, and some of the common problems are discussed. Because benthonic and planktonic faunas are distinct and separate in nature, a review of modern literature studies involving benthonic faunas is considered first, followed by studies of planktonic faunas. Planktonic/benthonic ratios, paleotemperature indicators, and the relation of live/total ratios to sedimentation rates are discussed and evaluated.

7. B. J. SCULL, C. J. FELIX, S. B. McCALEB, AND W. G. SHAW, Sun Oil Company Research Laboratory, Richardson, Tex.
INTER-DISCIPLINE APPROACH TO PALEOENVIRONMENTAL INTERPRETATIONS

In subsurface studies, unlike surface studies, specific environments of deposition can not be established reliably on the basis of sediment geometry because a sediment pattern can represent several environments. Clues from various disciplines can be integrated to identify regional and local environments—deltaic plain, open shelf, distal bar, longshore bar, lagoon, swamp, littoral zones, *etc.* The accuracy of interpretations is governed by the types of samples available, types of disciplines applied, spacing of control wells, and the experience and imagination of the interpreters. The confidence level ordinarily ranges from 80 to 95% in Tertiary and younger strata but is in few cases more than 85% in older sediments.

Because paleoenvironments resulted from the interaction of climatic, physical, chemical, and biotic factors, each factor must be evaluated in part and in combination. The physical-chemical system is determined from the mineralogy, textures, sedimentary structures, and trace chemical gradients ascertained with petrologic, X-ray mineralogy, and geochemical methods. These methods are applicable to all environments. Palynology utilizes pollen and spores and other plant and animal micro-entities; their acid-resistant nature and abundance permit statistical applications to paleoecologic and stratigraphic problems. Evaluations principally are botanical with an environmental range of terrestrial to open-marine shelf. Fossil faunal assemblages chiefly are marine and contribute information about water depths, salinity values, and turbidity. For each specific environment, one discipline