Young Oil Co., Fort Worth, Tex.

Waveland Field, Unique Structural and Stratigraphic Trap

See abstract in August AAPG *Bulletin*, p.1428

SWANN, CHARLES, Georgia Geol. Survey, Atlanta Ga., and JON M. POORT, DeGolyer and MacNaughton, Dallas, Tex.

Early Tertiary Lithostratigraphic Interpretation of Southwest Georgia

In southwest Georgia, relatively little detailed mapping has previously been conducted in the Midway and Wilcox Group equivalents even though there has been mining activity and numerous outcrops are available. Part of the problem has been the poor accessibility of many outcrops, apparent abrupt facies changes, and minimal subsurface data. During 1975-78, new surface and subsurface data were collected through detailed quadrangle mapping, government and commercial well-drilling activities, and data acquired from U.S. Corps of Engineers projects.

These new data provide the basis for a reevaluation of early Tertiary lithostratigraphic relations in four counties in southwest Georgia and one county in Alabama. The research area was chosen to include (1) areas which have previously presented correlation problems owing to apparent abrupt facies changes, (2) regional mining districts, and (3) the classic outcrops along the Chattahoochee River. The local early Tertiary (Paleocene) stratigraphic units included in the research were the Clayton, Nanafalia, and Tuscahoma Formations.

The primary conclusions and resulting lithostratigraphic interpretation of southwest Georgia's Tertiary geologic history are: (1) the selected research area provides an excellent opportunity to analyze the pre-Tuscahoma erosional degradation surface and the subsequent transgressive onlap of the Tuscahoma over the truncated Nanafalia, Clayton, and Providence (Late Cretaceous); (2) the presence of a basal Tuscahoma deltaic sequence which includes an interval of quartz pebble conglomerates and kyanite-bearing sands, petrified wood, and silicified clasts of chalk; and (3) the interpretation of lithologic associations which correlates the economic zones in the Springvale, Andersonville, and Eufaula mining districts with the Tuscahoma which may provide an exploration aid for analysis of other regional bauxite and kaolin deposits.

THOMSON, ALAN, Shell Oil Co., New Orleans, La.

Origin of Porosity in Deep Woodbine-Tuscaloosa Trend, Louisiana

Cores of the Woodbine and Tuscaloosa Formations from False River field, Pointe Coupee Parish, Louisiana, contain sandstones from 20,000 ft (6,000 m) with anomalously high porosities and permeabilities. Porosities greater than 25% and permeabilities of hundreds of millidarcys are common. Scanning-electron microscopy shows that individual grains of these olive-green, semifriable sandstones are coated with chlorite. The chlorite is present as 7 to 10 $\mu$-wide hexagonal plates which are arranged edgewise, one crystal thick, on grain surfaces. Sandstones with more or less continuous chlorite coatings around quartz grains display little framework compaction and minor development of secondary quartz overgrowths; however, many interbedded sandstones with little or no chlorite are completely cemented by secondary quartz. Intermediate between these extremes are sandstones with incomplete or poorly developed chlorite coatings; these display outgrowths of secondary quartz rather than overgrowths of an envelope nature.

Petrographic and SEM data indicate an early diagenetic origin for the chlorite, which apparently ceased to form once detrital grains were coated with a single layer of crystals. This layer was sufficient to mask nucleation sites for silica overgrowths and, in addition, may have prevented compaction by pressure solution, thereby allowing the sandstones to be buried to great depths without appreciably reducing porosity.

The chlorite was probably derived from ultrabasic volcanic detritus which is present in the sandstones to varying degree. The source of this detritus can be traced to the peridotite belt of southern Arkansas.

WEISE, BONNIE R., Bur. Econ. Geology, Austin, Tex.

Wave-Dominated Deltaic Systems of Upper Cretaceous San Miguel Formation, Maverick Basin, South Texas

Sandstone units of the Upper Cretaceous San Miguel Formation in south Texas are wave-dominated delta sequences deposited during a major marine transgression. San Miguel sediments were deposited in the Maverick basin within the Rio Grande embayment. Cross sections and sandstone maps reveal that during deposition of the San Miguel, the Maverick basin consisted of two subbasins. A western subbasin received sediments from the northwest; the eastern subbasin received sediments from the north.

Net-sandstone patterns show that the thickest parts of the sandstone bodies are generally strike oriented. Where not eroded, sand-feeder (fluvial) systems are indicated by dip-aligned components on the updip sides of the sandstone units. According to these net-sandstone patterns, the San Miguel deltas vary considerably and make up a wide spectrum of wave-dominated delta types.

The most common vertical sequences in the San Miguel coarsen upward from silt and clay to fine sand. Burrows dominate, and the few primary structures are of small scale. Large-scale cross-beds are observed only in outcrop. Strand-plain or barrier-island facies sequences, which prevail in most wave-dominated delta deposits, are incomplete in the San Miguel. In most places, only the lower shoreface is preserved. The upper parts of the sequences, which normally bear large-scale primary structures, were lost by marine reworking during subsequent transgression. Intense burrowing destroyed any primary structures at the tops of the truncated sequences.

WINKLER, C. D., Univ. Texas at Austin, Austin, Tex.

Late Pleistocene Fluvial-Deltaic Deposition, Texas Coastal Plain and Shelf

Deposition during the last Pleistocene glacial cycle has been interpreted in Texas from topography and bathymetry, drillers' logs, engineering test borings, offshore sparker profiles, and by detailed drilling in Brazoria County. Major controls on deposition were found to be glacio-eustatic sea-level fluctuations and drainage-basin characteristics.

The lower coastal plain is essentially a mud-rich alluvial plain of coalescing low-gradient fans. An older Pleistocene alluvial plain (Lissie Formation) is tilted and overlapped by a younger one (Beaumont Formation). By repeated avulsions, each river deposited a branching network of discrete meander-belt sand bodies, shown by both soil maps and net-sand maps. Detailed drilling of a meander belt of the ancestral Brazos River shows the channel to be 5 to 7 m deep, but substantially greater sand thicknesses developed by stacking of point-bar sequences during fluvial aggradation. Crevasse-splay deposits are virtually absent and fluvial-sand bodies can terminate abruptly against overbank clay. Clay of the Brazos and Colorado alluvial plains is predominantly red, apparently derived from Permian and Triassic red beds in west Texas.

Transition downdip into deltaic and paralic deposits is recognized by brackish and marine fauna, by strike-oriented sand bodies, by changes in clay color, and by clinoform reflectors on sparker profiles. In response to a slow decline in sea level the Brazos, Colorado, and Rio Grande deltas prograded, increasing in thickness from less than 30 m near the present shoreline to as much as 130 m at the shelf edge. Between these major delta systems, barrier-island sand up to 20 m thick was deposited at high stand. At a lower sea level, patch reefs grew at the shelf edge between major delta lobes.

Sea-level fluctuations resulted in three depositional phases: an aggradational phase (ca. 120,000 years ago) during late rise and stillstand, dominated by fluvial and barrier systems; a progradational phase (120,000 to 20,000 years ago) during a gradual fall, dominated by deltaic systems; and a rapid transgressive phase (20,000 to 4,000 years ago), with little deposition other than filling of interdeltaic lows. The Texas coast is now in an early aggradational phase.

## CALL FOR PAPERS
## SOUTHWEST SECTION AAPG
**February 25-26, 1980**

"Energy Exploration for the 80s" is the appropriate theme for this first Southwest Section AAPG meeting of the 1980s. The convention will be held February 25-26, at the El Paso Convention Center, El Paso, Texas. Tentative topics for technical sessions are: (1) Permian basin geology (a symposium to honor the contributions of John M. Hills in the exploration of the Permian basin); (2) frontier exploration in the southwest (undeveloped basins, deep-basin formations); (3) secondary and tertiary oil recovery; (4) Cretaceous stratigraphy of the southwest; (5) alternate energy resources (uranium, geothermal, coal); and (6) early basin-and-range development. You are cordially invited to submit an abstract for one of these sessions or for a general petroleum geology session. The Roswell Geological Society will offer partial financial support to help offset preparation costs for papers concerning the petroleum geology of southeastern New Mexico. Contact EDWARD K. DAVID (address below) for details.

Two field trips and an AAPG Continuing Education short course (title not yet selected) are planned for February 24, the day preceeding the general meeting. The field trips are: (1) structure and stratigraphy of the Sierra de Juarez, Chihuahua, Mexico, and (2) stratigraphy of the El Paso region.

A social program is planned that will include a shopping trip to Juarez (ladies' program) and an evening Mexican fiesta at a local hacienda (general convention).

Abstracts should be submitted to: JERRY M. HOFFER, Department of Geological Sciences, University of Texas at El Paso, El Paso, Texas 79968, by November 1, 1979. For additional information contact: CHARLES J. STUART, Department of Geological Sciences, University of Texas at El Paso, El Paso, Texas 79968, or EDWARD K. DAVID, 731 Petroleum Building, Roswell, New Mexico 88201.

## PACIFIC SECTION ANNUAL MEETING
**Bakersfield, California**
**April 9-11, 1980**

**Energy—Challenge of the 80s**

Pertinent papers are needed for the AAPG sessions of the 1980 Pacific Section convention, to be held at the Civic Auditorium in Bakersfield. Emphasis will be on exploration, development, petroleum research, and technology for each of the 4 half-day sessions. Sessions planned are (1) General: creative exploration and development in the current political and economic climate. (2) Offshore: new and potential areas in Alaska, Oregon, Washington, and California. (3) Onshore: recent California, Oregon, and Nevada discoveries or new field development; potential areas or zones in Alaska, Sacramento and San Joaquin Valleys, and Los Angeles basin; Overthrust belt of Nevada, western Utah, and western Arizona; oil potential in diatomite and other less common reservoirs. (4) Technology: reservoir geology for enhanced recovery; relation of geology to well completions; coordination of geologic and engineering disciplines; fractured reservoirs; hydrocarbon generation; mud logging, drill-stem testing, and other evaluation methods.

Papers should demonstrate the use of new ideas or stimulate creativity in petroleum exploration and development. Approximately 20 papers averaging 20 minutes presentation time will be selected. A 10-minute question and answer period will follow each paper. The deadline for submittal of abstracts is October 15, 1979. Authors will be notified as to acceptance of their abstracts by late November.

Preliminary abstracts of approximately 300 typed words should be submitted to either: AAPG Program Chairman, BRAD NEWMAN, Box 5237, Bakersfield, California 93308, phone (805) 399-2961; or Technical Program Coordinator, K. E. WAINWRIGHT, Box 147, Bakersfield, California 93302, phone (805) 831-1600.

A poster session is planned if sufficient displays are