

A large mid-Eocene channel is evident near Yoakum, Texas, from a study of the electrical logs of more than 50 wells. The channel, clearly erosional, is filled largely with silty shale, in sharp contrast to the sandy continental character of the typical Wilcox strata through which it was gouged.

This channel or canyon can be traced for more than 50 miles, from its mouth near the southeast line of Lavaca County up and north-northwesterly to the outcrop of the Wilcox in Bastrop County. At its maximum development, near the town of Yoakum, it has a width of 10 miles and a depth of approximately 3,000 feet.

A completely satisfactory explanation of the origin is difficult. The factors involved must include the following.

1. The presence of a major stream.
2. The great thickening of the Wilcox now known to exist, to as much as 8,000 feet at the outer edge of the former shelf, which placed an unstable mass of sediments adjacent to deep water.
3. Slumps and slides at the mouth of the large stream, triggered by fault movement and extended inland by stoping guided by the stream channel, created turbidity currents powerful enough to cut a gentle gradient to the sea bottom.
4. An abrupt, brief transgression of the sea resulted in rapid filling of the channel and deposition of a blanket of shale over a large area outside the channel. This was followed by a regression during which the extraordinarily thick and extensive sands of the Carrizo were deposited. These clean massive sands of the uppermost Wilcox entirely obliterated any evidence of the great channel below.

13. TEXTURAL DIFFERENCES BETWEEN TWO TYPES OF SHOESTRING SANDS, John J. W. Rogers and Cyrus Strong, Department of Geology, The Rice Institute, Houston, Texas.

Exploitation of oil and gas accumulations in "shoestring sands" can be aided materially by determining, with samples from even a single well, whether a sand stringer is an offshore bar deposit with a linear shape and lying parallel with the depositional trend, or whether it is a river deposit cutting across the depositional trend and having a sinuous shape. The present research has disclosed textural criteria applicable to well samples which serve to differentiate these two types of "shoestring sands."

Samples taken from rivers and from beaches along the Texas Gulf Coast indicate clear textural differences between the two environments. Compared with river sands, beach sands show an extremely restricted range of mean sizes and sorting coefficients. Furthermore, river sands with sorting coefficients equal to those of beach sands are invariably coarser than beach sands, whereas river sands of the same mean size as beach sands are more poorly sorted. Consequently, plots of mean size versus sorting yield a clear distinction between the two types of sediment.

The foregoing information has been obtained by sieve analyses of unconsolidated sediments. Mean sizes and sorting coefficients of sandstones, however, can be approximated readily by grain counts in thin sections. In 15 minutes, or less, sufficient grains can be counted in section to enable the geologist to differentiate the typical beach and river sands studied in the present work.

14. INFLUENCE OF JACKSON DOME ON SEDIMENTARY FACIES AND EFFECT ON WATER-BEARING PROPERTIES OF CLAIBORNE IN JACKSON AREA, MISSISSIPPI, Joseph W. Lang, U. S. Geological Survey, Jackson, Mississippi.

This paper summarizes the importance of diastrophic uplift of the Jackson dome, which occurred during pre-Tertiary time and may have continued more or less active in the middle Eocene, and its influence on the sedimentary cycles in the Claiborne. The uplifting together with compaction of underlying sediments in the rim-syncline area affected the thickness, character, and attitude of the formations and established controls on the occurrence and quality of the ground waters.

Isopachous maps and stratigraphic sections are presented to show the thicknesses of the Sparta sand and Cockfield formation on and around the dome; they indicate facies and thickness distribution of the sediments in these and several other units, and the size of the structure. Local concentration of lignitic material in the aquifers causes various degrees of straw-colored water affecting its usefulness for certain specific purposes. The pertinent stratigraphic units and the two principal aquifers are described.

15. ANALYSIS OF FACTORS AFFECTING QUANTITATIVE ESTIMATES OF ORGANISM ABUNDANCE, Louis S. Kornicker, Institute of Marine Science, The University of Texas.

Analyses of the distribution of dead organisms in recent sediments is strongly influenced by the method used to establish and report abundance counts. Comparison of abundance counts from recent and ancient strata are affected by the composition of the sediment, its history, and the type of sample upon which counts are based.

Examination of the physical relation between weight and volume sediment samples, and comparison of estimates of organism abundance obtained from equal-volume and equal-weight samples of recent sediment, show that kinds of minerals forming the sediment have little effect on abundance distribution patterns determined by counting the number of specimens in samples of a given weight