

ABSTRACTS OF TECHNICAL PAPERS

1964-1965

October 5, 1964

GROVER E. MURRAY, LSU, Baton Rouge
 "Indigenous Precambrian Petroleum?"

Accumulated evidence indicates that (1) the major portion of chemical and organic evolution occurred during the 3.5×10^9 years of the earth's history preceding the Paleozoic; (2) the basic elements constituting petroleum existed in the early phases of the earth's history; (3) unmetamorphosed Precambrian lithic types are similar to younger ones; and (4) the population of the later Precambrian seas was relatively rich and varied, though hard skeletal parts are notably absent in these rocks and, in all probability, were not widely developed.

As petroleum is now generally considered of organic origin and is a widely disseminated and integral part of most sedimentary rocks, should we not consider unmetamorphosed Precambrian strata to be prospective for petroleum?

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October 12, 1964

JOHN WONCIK, Apache Corp., Tulsa
 "Recent Developments in Dewey and Custer Counties, Oklahoma"

Dewey and Custer Counties lie in the approximate geographic center of the Anadarko basin of western Oklahoma. Geologically, they are situated on the northern shelf area of the basin. No production of oil or gas existed in these counties prior to 1957. By the summer of 1964, in a period of seven years, over 200 wells had been drilled, which established one trillion cubic feet of gas and 30 million barrels of oil. The investment in these wells is approximately 30 million dollars and the value of the production is approximately 240 million dollars. The return on the investment should be 8:1. The accumulation of hydrocarbons is due to a variety of traps at various depths. The Putnam pool is a reef bank limestone accumulation of gas and oil in the Oswego Limestone of Pennsylvanian age and occurs at 9,700 feet. This pool contains 50 gas-condensate wells and 80 oil wells, accounting for 500 billion CFG and 30 million barrels of oil. The pool is three miles wide and approximately 30 miles long.

The Lenora pool produces from a stratigraphic trap in the Morrow sand of Lower Pennsylvanian age at a depth of 10,500 feet. Twenty wells on 640-acre spacing account for approximately 40 billion CFG. Custer City is a deep gas pool producing from the Hunton Limestone at 14,000 feet. Five wells have been drilled. Large open flow potentials, some exceeding 150 million CFGPD, characterize some of the wells. Individual reserves in this pool, in some wells, exceed 50 billion CFG.

Five new pipelines market gas in the area; whereas, seven years ago, no lines were present.

Future development in these two counties should see reserves doubled. New pools in the Morrow, Tonkawa, Cherokee, and Hunton are expected. The area is only 20 per cent evaluated.

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October 19, 1964

JOHN IMBRIE, Columbia University,
 New York

"Sedimentary Structures in Modern Carbonate Sands of the Bahamas"

A layer of unconsolidated Recent sediment, 0-20 feet in thickness, lies discontinuously on a karst surface of Pleistocene limestone in the Bahamas. Geologists may think of this layer as an embryonic stratigraphic formation deposited during the past 5000 years as part of a transgressive hemicycle initiated by post-glacial sea-level rise. Although much has been learned about the sediments exposed on the sea floor, we are only beginning to study cores and understand in three dimensional terms the stratigraphy, paleontology, and sedimentology of the formation.

Emphasis is placed on sedimentary structures in Bahamian carbonate sands, particularly (1) surface forms such as ripples, dunes, bars, and linear furrows that can be studied on air photos and by underwater inspection; and (2) internal structures (burrows and stratification) that can be studied on the 1 square foot surfaces of box-cores. Three types of strata formed by bottom traction occur: avalanche deposits formed at the angle of repose on the lee sides of advancing ripples or embankments; accretion deposits formed at lower