April 2, 1962
L. K. O'Bert, Foreign Dept., Amerada Petroleum Corporation
"Recent Developments in Libyan Petroleum Exploration"

April 9, 1962
George L. Robb, Geo Prospectors, Inc.
"Geology and Geophysics of the Arkoma Basin"

Abstract
The paper attempts to present a short historical summary of exploration and geophysical activity within the basin. The difficulties in obtaining and interpreting geophysical data have matched and surpassed the difficulties of geological analysis. Geophysical evidence of Pre-Wapanuckan faulting will be presented.

April 16, 1962
"Stratigraphy and its Role in Petroleum Exploration with Special Emphasis on the Gulf Coast"

Abstract
Stratigraphy is of paramount importance in the exploration for mineral deposits in sedimentary rocks because the scientific exploration for any such deposit requires that the geological events which determined its formation and location be known. The depositional and post-depositional history of the section and area being studied are in the province of the stratigrapher. He determines the geological age and the correlation of strata; the depositional environments of the sediments through his knowledge of Recent faunas, floras, and sedimentary processes in all environments; and he knows the most favored habitats for all indigenous minerals in stratified rocks.

The petroleum stratigrapher, especially, is concerned with the kinds of rocks making up the section which is being studied; the source areas of the terrigenous clastics and the depositional conditions and probable distribution of the non-clastics; the fossil faunas and floras and their significance in local and regional correlation, and their paleoecological value; the prediction into unknown areas of the kinds and the distribution of sediments, and whether the areas are favorable or unfavorable for oil and gas occurrence.

The structural history, which made it possible for sediments to accumulate and be preserved, is known only through stratigraphy. All data from outcrop and well sections, from geophysical surveys, and from knowledge of regional stratigraphic and tectonic framework of the area are used to interpret the history. Maps, sections, and diagrams must be constructed for each layer to show its thickness, lithofacies, depositional environments, and present structure; and from these the oil and gas possibilities can be evaluated. Each area, whether it be a local prospect, a "trend", or an entire basin, should be given such evaluation by a stratigrapher.

There has been a tendency in recent years for geologists to overemphasize present structure of layered rocks without knowledge of their depositional history; to accept unproved theories about fluid and gas movements in rocks; to interpret conditions as due to diagenesis without knowing the original conditions; and to rely on machine data instead of examining the rocks themselves. Stratigraphers who are dedicated to the science of historical geology, who are willing to constantly learn more and more about Recent and ancient sediments, faunas and floras, and who can work closely with all groups of earth scientists can make the greatest contribution to petroleum exploration. Those who consider the naming of "new" species of fossils, the reclassification of groups of fossils, or the naming of each stratum the most important work have no
place in petroleum exploration.

There are very likely many times more hydrocarbons remaining to be discovered than are presently being predicted. Only the stratigrapher who understands the habitat of oil and gas and knows the depositional environment of each productive and presently unproductive layer has an understanding of the magnitude of the undiscovered accumulations.

The depositional and tectonic history of the Gulf Coastal Plain, and the oil and gas occurrences in this petroliferous basin, are presented to illustrate the stratigraphic principles and the methods discussed.

April 23, 1962

J. K. Morgan, Skelly Oil Company

"Geologic Setting for Oil Production, Southwestern Nebraska and Northwestern Kansas"

Abstract

Regional geology Southwestern Nebraska and Northwestern Kansas and relationships between the Cambridge Arch, Las Animas Arch, Salina Basin, Anadarko Basin, and Denver Basin are presented. Trapping mechanisms for oil fields in the area are discussed with emphasis on Sleepy Hollow field. An estimate of future oil possibilities is made.

May 7, 1962


"Activities of the New Mexico Bureau Pertinent to Petroleum Geologists"

Abstract

The New Mexico Bureau of Mines has no regulatory functions. Services maintained for the benefit of the petroleum industry include a well sample library, well data files, electric log collection, and some sample descriptions and plotted logs. Facilities are available in Socorro for the use of visitors who wish to make use of these services. County dry hole maps and yearly drilling data reports are regular publications.

The geologic research program of the New Mexico Bureau of Mines and Minerals Resources must be diluted among the many branches of the mineral industry -- oil and gas, metallic mining, producers of industrial rocks and minerals, users of ground water, and metallurgical processors. Projects of aid to the petroleum geologist are chiefly areal geologic mapping and stratigraphic studies of a local or regional nature. Reports published during this biennium include areal geologic studies of the southeast Chama Basin, Luna County, and the Alum Mountain, Las Cruces, and Tres Hermanas Mountains quadrangles, as well as stratigraphic articles on the Sacramento Mountains, Montoya Group, Pennsylvanian and Mississippian rocks in southwestern New Mexico, and Cretaceous and Tertiary palynology of the eastern San Juan Basin. Areal mapping is in progress on the Ojo Caliente, Cebolla, and Brazos Peak quadrangles, and in the Truchas Peaks area of northern New Mexico, and the Carrizoza, Capitan, Winston, Sugarloaf, Big Hatchet, Pelona, San Diego Mountain, Walnut Wells, and Mimbres quadrangles in southern New Mexico. Stratigraphic studies are those of clays in the Cretaceous strata of the southwestern San Juan Basin, Pennsylvanian and Early Permian beds in the Zuni Mountains area, Mississippian and Pennsylvanian rocks in the southern Sangre de Cristo Mountains, and Mesozoic and Paleozoic strata in south-central and southwestern New Mexico.