KENTUCKY (Eastern)

During the year, 416 wells were drilled: 59 were dry, 254 were gas wells developing an open flow of 116,963,000 cu. ft. per day, and 103 were oil developing an initial production of 903 barrels of oil, and 6 pressure wells were completed.

Production was found in zones ranging from the Salt sand (Pennsylvania) through the Sunnybrook (Ordovician).

Most of the drilling was done in the eastern border state in developing Devonian shale gas production and extending existing pools, the Rockhouse pool developed in Johnson City from the Big Six (Silurian) sand being the only important new field.

TENNESSEE (Eastern)

During the year, 9 wells were completed in the area east of the Cincinnati arch, drilling a total of 13,705 feet. None of the wells can be classed as commercial although encouraging showings were found.

In the Cumberland Plateau area, several blocks of leases are still retained by a large company. In this area the pre-Mississippian remains essentially unexplored.

MARYLAND

One well was completed in the western Panhandle of Maryland. This well, located in the highly folded area of Garrett County, was completed at a total depth of 8,165 feet after encountering a showing of gas and salt water in the Oriskany sand at 8,096 feet.

VIRGINIA

Two wells were completed during the year, 1 in Wise County as a dry hole through the Devonian shale at a total depth of 5,348 feet, and 1 in Rockingham County encountering less than 100,000 cu. ft. from the Devonian shale and Oriskany sand at a total depth of 2,986 feet.

72. HARRY L. BALDWIN, JR., Servicio Geologico, Y.P.F., Buenos Aires, Argentina, South America

The Tupungato Oil Field, Province of Mendoza, Argentina

The Tupungato oil field is situated 50 kilometers south-southwest of the city of Mendoza in west-central Argentina, in an area just east of the foothills of the Andes Mountains where the principal tectonic features are overthrust faults of late Tertiary age. The surface structure, discovered in 1932, is a closed dome with faulted west flank. The discovery well was completed in 1934 at a depth of 250 meters, and a total of 17 shallow wells were drilled to depths averaging 450 meters, most of which produced oil associated with strong flows of salt water from fractures in the upper part of the Tertiary (Pliocene) section. The discovery well of the Victor zone of Upper Triassic age was completed in 1938 at a depth of 1,796 meters. By the end of 1941, 23 wells had been drilled, of which 20 were producing an average of 8,800 barrels per day. The major part of the differences between the structure of the various zones which can be identified in well samples is believed by the author to be due to the presence of low-angle thrust faults which cause variations in the thickness of the Tertiary section in different parts of the field, but this can not be definitely proved. There is some indication of the existence of a gentle fold prior to the deposition of the Tertiary.

The oil occurs in fractures and porosity in the upper part of a thick series of volcanic tuffs, but is believed to be produced almost entirely from the fractures. It is of the same type, with a high paraffine content, as that produced from lower stratigraphic levels in the other oil fields of northern Mendoza. A well to test these deeper zones is now being drilled. The Yacimientos Petroliferos Fiscales is the only operator in the field.

73. DONALD J. MACNEILL, McColl-Frontenac Oil Company, Limited Calgary, Alberta, Canada

Stratigraphy and Structure of the Moose Mountain Area, Alberta

The Moose Mountain area, situated along the front range of the Canadian Rockies, 32 miles northwest of the Turner Valley oil field, Alberta, has interested oil companies for a great many years. Its main feature is a large domal structure, approximately 10 miles long and 3 miles wide, that has been drilled at three widely separated locations, resulting in two producers and a failure. These tests were started only a few hundred feet above the Mississippian-Devonian contact. The dry hole was drilled about 2,700 feet below the top of the Cambrian; the producers are deriving the gas and oil from rocks of Devonian age. There are limestone zones in the lower part of the Devonian that are extremely porous where they crop out north and south of the Moose Mountain area; but the pore spaces were found to be filled with calcite in beds that were stratigraphically equivalent to these zones where they were encountered, structurally high, in the McColl-Frontenac Oil Company's test on the Moose Mountain anticline.

74. F. B. PLUMMER, University of Texas, Austin, Texas
PAUL TAPP
Technique of Testing Large Cores of Oil Sand

Testing samples of oil sands for determining productivity of oil wells and estimating reserves has been described and discussed by many authors. Most articles suggest the use of small samples, 2½ cm. in diameter. Since texture, porosity, and permeability of some rocks, particularly limestones, varies greatly in short distances, very large numbers of small samples are needed to determine even an approximate average permeability and porosity. This paper describes and illustrates apparatus, methods, and techniques for determining permeability, porosity, and fluid content of large slices of rock cores obtained from core drills from 20 to 100 times the size of the ordinary samples. A discussion is presented also of the feasibility and advantages of using large core samples and the effect of several factors such as minute quantities of connate water, presence of traces of emulsions, and presence of certain colloids on results of fluid-flow measurements in large core samples.

PALEONTOLOGY AND MINERALOGY DIVISION

1. H. W. TWENHOFEL, University of Wisconsin, Madison, Wisconsin
The Rate of Deposition of Sediments: A Major Factor Connected with Alteration of Sediments after Deposition
2. W. C. KRUMBEIN, University of Chicago, Chicago, Illinois
Physical and Chemical Changes in Sediments after Deposition
3. E. C. DAPPLES, Northwestern University, Chicago, Illinois
The Effect of Macro-organisms Upon Sediments
4. CLAUDE E. ZOBELL, University of California, La Jolla, California
Bacterial Activity and the Transformation of Marine Sedimentary Materials
5. M. L. THOMPSON, New Mexico School of Mines, Socorro, New Mexico
The Stratigraphy and Fusulinid Faunas of the Marine Permian Wolfcamp in New Mexico
6. F. B. PLUMMER, University of Texas, Austin, Texas
Stratigraphy of the Marble Falls Formation in Central Texas
7. LOUIS R. WILSON, Louisiana State University, Baton Rouge, Louisiana
Vicksburg Enoplostomellas
8. EDWARD MONSOUR, Louisiana State University, Baton Rouge, Louisiana
Fossil Corals of the Genus Turbinolia from the Gulf Coast
9. BENJAMIN A. TATOR, School of Geology, Baton Rouge, Louisiana
Smaller Miocene Mollusca
10. HUBERT G. SCHENCK, Stanford University, Palo Alto, California
BRADFORD C. ADAMS, The Texas Company, Los Angeles, California
Operations of Commercial Micropaleontologic Laboratories
11. LOIS T. MARTIN, Stanford University, Palo Alto, California
Eocene Foraminifera from the Type Lodo Formation, Fresno County, California
12. R. HENDEE SMITH, Louisiana State University, Baton Rouge, Louisiana
New Species of Discocyclina (Aktenocyclina) from Alabama and Texas
13. R. STANLEY BECK, Richfield Oil Corporation, Bakersfield, California
Eocene Foraminifera from Cowlitz River, Lewis County, Washington
14. HANS E. THALMANN, Stanford University, Palo Alto, California
The Genus Hantkenina and Its Subgenera
15. R. WRIGHT BARKER, Shell Oil Company, Houston, Texas
Notes on Some Larger Foraminifera from the Lower Cretaceous of Texas
16. L. C. AYCOCK, Louisiana State University, Baton Rouge, Louisiana
Caddell Eocene Operculinoides (By permission of Phillips Petroleum Company)
17. WILLARD D. PYE, University of Chicago, Chicago, Illinois
Rapid Methods of Making Sedimentological Studies of Sands, Especially as Applied to Cores
18. E. B. BRANSON, University of Missouri, Columbia, Missouri