have resulted in drilling 42 test wells and three non-productive redrill holes to evaluate approximately 1,530 acres. As of September 15, 1951, there were 25 wells producing either gas or light-gravity oil, 15 dry holes, and one abandoned producer. This low exploration and development ratio of 5:3 reflects the complexity of the geology and structure of the Belgian Anticline field.

The structure, essentially, is a southeast-plunging anticline. The north flank has been shoved over by a series of northwest-southeast-trending south-dipping thrust faults. This asymmetric fold has been broken into a complex fault block pattern by the combination of both high-angle thrusts and normal cross faults. Three principal unconformities truncate the structure from east to west: one at the base of the Miocene (lower Zemorrian-Salt Creek shale), another at the base of the Saucesian, and the third at the base of the middle Miocene (Gould shale).

Production has been established from the Eocene Point of Rocks sand, the only blanket sand across the structure, the Oligocene Oceanic sand, the major productive sand of the field, and from the Miocene lower Zemorrian *Phacoides* sand, the uppermost productive zone. Production from the Oceanic sand has been established from drill depths ranging from 4,480 to 6,055 feet. The Carneros sand and the fractured upper Miocene shale as yet have not been productive.

CURTIS H. JOHNSON, General Petroleum Corporation, Los Angeles.
Case History of Helm Oil Field, Fresno County.

A seismic map prepared by Western Geophysical Company for General Petroleum Corporation, preceding the discovery of the Helm oil field in Fresno County, California, by the Amerada Oil Company in October, 1941, is compared with a recent structure map based on the results of drilling, and good agreement is seen.

Structure and stratigraphy now known from drilling are compared with reflection-seismograph cross sections obtained by the General Petroleum Corporation and conclusions are drawn about the optimum seismic field and interpretative techniques in this type of area.

The local results of a gravity-meter survey by the Brown Geophysical Company for the Seaboard Oil Company are shown and interpreted, though neither the Amerada nor the General Petroleum Company used gravity results as a guide in seismic programs.

L. F. MALARIN, Standard Oil Company of California, Bakersfield.
Durham Gas Field.

A geological-geophysical case history. Structure of the Durham gas field as determined from seismograph data and as verified by subsequent drilling.

K. E. BURG, Geophysical Service, Inc., Dallas, Texas.
Exploration Problems of the Williston Basin.

The various types of structures to be encountered in the Williston basin and the application of the seismograph and other geophysical tools to the location of these structures are discussed.

Specific examples in the form of seismograph record cross sections show the ability of the reflection seismographs to locate these structures. Many of the unique problems encountered in the area are illustrated and suggested solutions outlined.

JOINT ANNUAL MEETING, BILTMORE HOTEL LOS ANGELES, MARCH 24–27, 1952

HOWARD C. PYLE[1]
Los Angeles, California

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS
EXECUTIVE COMMITTEE

Frank A. Morgan, President
Clarence L. Moody, Past-President
Lewis G. Weeks, Vice-President
Robert H. Dott, Secretary-Treasurer
Kenneth K. Landes, Editor

SOCIETY OF ECONOMIC PALEONTOLOGISTS AND MINERALOGISTS
COUNCIL

Thomas H. Philpott, President
W. C. Krumbein, Past-President
K. O. Emery, Vice-President
Cecil G. Lalicker, Secretary-Treasurer
Jack L. Hough, Managing Editor

SOCIETY OF EXPLORATION GEOPHYSICISTS
EXECUTIVE COMMITTEE

Sigmund Hammer, President
George E. Wagoner, Past-President
Curtis H. Johnson, Vice-President
Robert C. Dunlap, Secretary-Treasurer
Paul L. Lyons, Editor

[1] General chairman, convention arrangements. 918 Pacific Finance Building, 621 South Hope Street.