imagination, one can visualize the field being twice its present size. Also there are possibilities of deeper producing sand or sands being present and the shallow tar zones being produced.

WILLIAM R. MERRILL, Standard Oil Co., Ojai

Eocene of Eastern Santa Ynez Mountains

This paper presents the more important structural and stratigraphic features of the geology of more than 1,000 square miles of sedimentary outcrops which occur in some of the most inaccessible country in California.

The area presented is structurally an east-plunging anticlinorium. It is divided into three general divisions by the Pine Mountain and Santa Ynez thrust faults. Most interesting is the complex central part which lies between these faults and constitutes the major part of the anticlinorium. Imposed upon this dominant regional feature are numerous faults and tightly folded to overturned structures which display a definite tectonic pattern.

More than 35,000 feet of sedimentary section is present, ranging in age from middle Miocene to Jurassic (Franciscan). Approximately 13,000 feet of this section has been recognized as upper Eocene. It is divided into the Coldwater, Cozy Dell, Matilija, and Juncal formations of current usage. The Sierra Blanca limestone is considered the basal unit of the Juncal. A general lithologic description of the formations and their relationships are presented, including a discussion of the several hiatuses of deposition.

CHARLES F. GREEN, Consulting Geologist, Bakersfield

South Pyramid Hills Oil Field, Kern County, California

A general examination of the stratigraphy of the South Pyramid Hills oil field demonstrates that oil occurs at depths varying from 1,100 to 3,200 feet, in beds of middle Miocene and upper Eocene age.

A detailed analysis of the stratigraphic and structural relationship indicates that the accumulation is effected by anticlinal folding in conjunction with faulting and unconformable overlap. These latter features, although responsible for the presence of the several producing zones, present difficult problems affecting the economic development of the field.

DONALD M. DAVIS, Consulting Geologist, Los Angeles

Markley Gorge, Sacramento County, California

The "Markley Gorge" is the name usually applied to the buried canyon known to exist under the south-central Sacramento Valley. This ancient gorge appears to have developed prior to upper Eocene deposition, and has an approximate maximum relief of 3,000 feet. Present well control indicates that it extends from the region north of the city of Sacramento to the region beyond the southwesterly limits of the Rio Vista gas field and probably drained into what is now Honker Bay.

The author will discuss his interpretation of the origin and extent of this interesting erosional feature and its relation to larger structural deformations.

HAROLD H. SULLWOLD, JR., Consulting Geologist and Petroleum Engineer, North Hollywood

Geology of West Edison Oil Field, Kern County, California

The West Edison oil field is on the east side of the San Joaquin Valley about 9 miles southeast of Bakersfield. Oil occurs principally in the non-marine Chanac formation (Pliocene-Miocene) and and marine Santa Margarita sand (upper Miocene), and minor production is developed from marine Nozu sand (middle Miocene) and Olcese(?) sand (lower Miocene). The total thickness of strata overlying basement varies from 4,000 to 6,500 feet, and average depth of wells is about 4,000 feet. A diagram based on unusually good well control shows the transitional relationships between the Chanac and Santa Margarita formations. Pre-Santa Margarita stratigraphy and structure are not clearly understood because of the paucity of data, but stratigraphic cross sections are presented in an attempt to portray possible conditions during that time.

The field is on a general regional homocline dipping southwest, and oil accumulation is largely due to normal faulting with partial help from lensing sands. Some of the larger pools in the field are trapped on the down-thrown side of normal faults.

The field was discovered in 1935 and has had five periods of activity as a result of discovery of new zones and new fault blocks. There are now 1,300 acres productive from 180 wells. Total production is more than 8 million barrels or 6,200 barrels per acre, and 1951 showed the highest annual production in the field's history, 1,400,000 barrels. Current production is 4,200 barrels per day, or an average of 23 barrels per day per well.