4. STUART K. CLARK AND JAMES S. ROYDS, Continental Oil Company, Ponca City, Oklahoma, "Structural Trends and Fault Systems in Eastern Interior Basin."

The Eastern Interior basin is a structural basin cradled between the Ozark uplift and the Cincinnati arch-Nashville Dome uplift.

The two most conspicuous structural features indicated by an areal geology map are the La Salle anticline and the nearly separated lobe of the basin in Kentucky.

A cross section indicates that the area acquired its basin character early and retained it through most of geologic history.

A study of the folding and faulting within the basin reveals two different types of structure.

One consists of a series of faults trending S. 20° W. and paralleling lines of anticlinal folding. Cross sections show these faults to be "normal diagonal shears" and the folds to be similar to the "granite ridge" and related lines of folding in the Mid-Continent area.

The other is the Shawneetown-Rough Creek fault zone and associated faults extending across the south end of the basin. Cross sections and data gleaned from the record dealing with this and the Kentucky River fault zone, to which it appears closely related, show this to be a type of faulting entirely different from the system first described. The authors suggest an explanation and a classification different from any proposed in the past.

5. ALFRED H. BELL, Illinois State Geological Survey, Urbana, Illinois, "La Salle Anticlinal Belt, Illinois."

The La Salle anticlinal belt in Illinois extends from Rock River in the vicinity of Oregon, Ogle County, south-southeasterly to Wabash River near St. Francisville in Lawrence County, a distance of about 260 miles. The north end of the La Salle anticlinal belt is in an area of complex structure in which several structural axes converge. At the south it fades out into the Indiana part of the Illinois structural basin.

The La Salle anticlinal belt is the site of one of the major oil accumulations of this country, the Southeastern Illinois oil field, located along its southernmost 65 miles. Total production to date has been 458,000,000 barrels of oil. The present production rate after 42 years of production is approximately 4½ million barrels a year. Approximately 19,307 oil- or gas-producing wells have been drilled in a total oil-producing area of 97,435 acres; of these approximately 10,878 wells are still producing.

The principal producing sands are Mississippian and Pennsylvanian in age. Small amounts of oil have been obtained from Devonian and Ordovician limestones in limited areas. Numerous dry holes have been drilled to the Devonian and deeper formations; a few reached the St. Peter sandstone.

It seems probable that the La Salle anticlinal belt has already had the greater part of its drilling development. The most promising future possibilities appear to be for stratigraphic traps on the flanks. Secondary-recovery methods, both repressuring and water-flooding, which are yielding substantial quantities of oil in limited areas of the Southeastern Illinois field, have great possibilities for future expansion.

6. DARSIE A. GREEN, Pure Oil Company, Olney, Illinois, "Oil Fields on Noble Anticline, Jasper, Richland, Clay, Wayne Counties, Illinois."

This discussion pertains to the oil fields on a major anticline, the axis of which extends northeast and southwest through parts of four counties in the Illinois basin. The direction of this axial trend in Richland and Clay counties varies 45° from the axial trend of the LaSalle anticline in Lawrence County. This anticline disappears into the normal dip on the flank of the LaSalle anticline in northeastern Jasper County and can not be interpreted as a branch of the larger structure.

Published papers by Theron Wasson and by Lynn K. Lee have related the history of the discovery of the structure by the reflection seismograph; the early drilling explorations; the early field developments; and have given the detailed descriptions of the producing formations. Nearly 9 years have elapsed since the latter of those papers were presented to the Association at the Oklahoma City convention in March, 1939. During these years continuous drilling operations have added enough new information to justify this supplement to the previous papers.

For lack of a better term, Lynn K. Lee referred to this anticline as the "Basin" anticline. Now that numerous productive anticlines have been developed in a wide area in the Illinois basin, it seems appropriate to give this structure a more localized geographic name. The term "Noble" is here suggested for that name, Noble being a well known town on the axis of the anticline in western Richland County.

The first slide shows the Noble anticline with 100-foot contours and shows its structural and geographic relations to folds on the LaSalle anticline on the east and the Louden and Salem anticlines on the west. The second slide shows the Noble anticline with 50-foot contours and the areal extent of the several oil fields on the anticline. Other slides and the discussion pertain to the irregular occurrence of some of the Chester sand pools in the various fields, and the erratic occurrence of some of the Ste. Genevieve limestone oil reservoirs.