greater primary and secondary recovery of oil. The information cementation yields concerning the periods of folding and oil accumulation is brought out.

In conclusion, the physical properties of the Bethel sandstone are compared with other sands of the Chester series, and insofar as possible the detailed data from the Bethel is applied to the other sand zones. The paleogeography and source of sediments are likewise discussed.

59. R. P. GRANT, Department of Conservation, State of Michigan, Lansing, Michigan
Oil and Gas Developments in Michigan During 1941

During 1941 the "Basin" was the most active district in Michigan due chiefly to development in the Reed City, Detroit River (Devonian) field in western Osceola County, the Headquarters Traverse (Devonian) field in southern Roscommon County, and extensive development of Michigan "Stray" ("Mississippian") gas fields in Osceola, Missaukee, and Clare counties.

Ten new oil fields and extensions and six new gas fields were discovered during the year, with the "Basin" taking the limelight insofar as new developments were concerned. The most important oil strike in southwestern Michigan was the West Hopkins Traverse (Devonian) field in Allegan County. Actual oil production dropped approximately 17 per cent below 1940.

More gas wells were drilled in 1941 than in any year since 1936. Actual gas production reached an all time high with 6 per cent increase over 1940. The Gulf Oil Company's Bateson No. 1 in the Kawkawlin field in Bay County was drilled to a depth of 10,445 feet into the St. Peter (Ordovician) sandstone, but was plugged back to 7,800 feet and kept as a condensate well. Late in December a gas well was discovered in Calhoun County in the Traverse (Devonian) limestone, opening an entirely new area to development.

The Panhandle and Eastern Pipeline Company began construction of a gas transmission line approximately 250 miles long. The line will run from the Michigan Gas transmission line in the southeastern corner of Lenawee County northward to Pleasant Lake in Washtenaw County. One branch will be laid west to Kalamazoo, the other will extend north to Flint and Saginaw. Construction started at Saginaw and the line is expected to be completed during 1942.

Geophysical prospecting and core testing were carried on at a brisk rate particularly in the northern and south-central parts of the Southern Peninsula.

60. ALFRED H. BELL, Illinois State Geological Survey, Urbana, Illinois
Development in the Eastern Interior Basin in 1941

More wells were drilled in 1941 in Illinois and southwestern Indiana than in any previous year except 1907 when drilling reached a peak in that area. Drilling declined in western Kentucky, making the total number of completions in the Eastern Interior basin in 1941 slightly less than in 1940. Much of the 1941 drilling (both pool and wildcat) was concentrated in the deep basin area in the region of the lower Wabash River in Illinois and Indiana where 44 new pools and 43 extensions were discovered. None of the new pools was of major size and the total output of new wells in the whole area failed to offset the decline of the older wells. Total production from the Eastern Interior basin in 1941 is estimated at 145,603,000 barrels as compared with 154,796,000 barrels in 1940, a decline of 6 per cent. Percentage of the national total was 10.3 in 1941 as compared with 11.5 in 1940.

Rocks of the Mississippian system continue to yield most of the oil in the area—91.5 per cent of the Illinois total of 133,750,000 barrels in 1941. No new Devonian production was discovered in Illinois in 1941 and the Devonian wells, which yielded an estimated 26 per cent of the Illinois total in 1940, produced only 6 per cent of the total in 1941. Pennsylvanian and Ordovician strata yielded estimated amounts of 1.7 and 0.9 per cent, respectively. Geologic studies indicate that lenticular sand conditions are important in controlling the occurrence of the oil.

61. GEORGE V. COHEE, Illinois State Geological Survey, Urbana, Illinois
Lateral Variation in the Chester Sandstones Producing Oil and Gas in the Lower Wabash River Area

Oil and gas production in the Wabash River Valley in southeastern Illinois and southwestern Indiana is from lower Pennsylvanian and Chester sandstones and the McClosky limestone of the Ste. Genevieve formation. The principal fields in the area are New Harmony Consolidated and Keensburg Consolidated. These fields include an