land: Geologic Section from Fisher County through Andrews County, Texas, to Eddy County, New Mexico.

The geologic section presented herewith has been compiled from sample logs of the West Texas-New Mexico Permian basin. It shows chiefly the continuity of the formations of the Whitehorse group from the east side to the west side of the basin. The gradation of sediments in the San Andres and Clear Fork from a shale and evaporite section on the east-side outcrop to an almost solid dolomite section in the subsurface in the basin is brought out by the large scale of the section and detailed character of the logs. In addition, the thicknesses of the formations are shown and the depths to producing strata in the basin.

4. E. H. SELLARDS, director, Bureau of Economic Geology, Austin, Texas: Early Paleozoic Formations in Texas.

The purpose of this paper is to summarize the available data derived from surface exposures and drilling records as to the extent of early Paleozoic seas in Texas. The first Paleozoic sea to invade Texas, so far as known, was that of Upper Cambrian time. This sea spread widely across central Texas, occupying a seaway extending from Oklahoma southwestward to El Paso. The Lower Ordovician sea occupied a similar seaway and may have extended somewhat more widely to the northwest. The Middle Ordovician sea covered at least the southern part of the Permian basin and probably connected through the Llanoria geosyncline with the Ouachita region of Oklahoma. The Upper Ordovician sea occupied the Llanoria geosyncline and a large part of trans-Pecos Texas. A Silurian sea is believed to have extended into northeast Texas, lying in the Llanoria geosyncline. A Silurian sea likewise submerged the Diablo Plateau-El Paso region of trans-Pecos Texas. Evidence is lacking to prove the connection of the two seas across Texas. A Devonian sea is believed to have extended across Texas, occupying the Llanoria geosyncline.

Starting with an emergent condition at the beginning of Paleozoic time, the major changes of Paleozoic time in the Texas region are: submergence through Cambrian, with maximum submergence in Lower Ordovician; emergence through Middle and Upper Ordovician, with maximum emergence in Silurian; submergence in Devonian and Mississippian, with maximum submergence about Upper Pennsylvanian; emergence reaching maximum at close of Permian or in Triassic.

5. M. G. CHENEY, consulting geologist, Coleman, Texas: Geology of North-Central and Central Texas.

Cross sections and maps reveal the Concho arch as an imposing northwest trending structural feature, denuded in the Llano uplift area. The similarity of this arch to the Central Kansas uplift would be more obvious except for greater westward tilting of the Texas area. As in central Kansas, a comparatively thin Pennsylvanian section rests on truncated Ordovician and older beds along this broad axis. Uplift and erosion of the Ordovician evidently began during pre-Mississippian time. The Bend, and, to a greater degree, the Millsap Lake, Garner, and Mineral Wells beds show both pronounced thinning and some truncation over this broad regional feature.

Attention is also given to the evidence of progressive development of the Ouachita-Marathon mountains, the Electra and Muenster arches, the Bend flexure and other large structural features of this region.

Because of the possible economic importance of the arched Ordovician beds, the identification of subdivisions by insoluble residues and general character of well cuttings has been attempted with encouraging results.

To facilitate correlation of the Pennsylvanian and Lower Permian strata, a classification by "subseries" as in the northern Mid-Continent and West Texas regions has been used in this paper. Such procedure places emphasis on unconformities and faunal changes of wide regional importance. Former group names are retained but boundaries redefined where needed.

The probable influence of the regional conditions in this area upon oil and gas migration and accumulation is discussed, such as the overlap of structurally high reservoirs by apparent source beds; differential pressures resulting from wedge-shaped overburden; progressive development of structural trends and local folds; and the character and distribution of sedimentary material, especially the development of local sandstone or limestone reservoirs and stratigraphic traps.

6. ELLIOT H. POWERS, geologist, Gulf Oil Corporation, Midland: Sand Hills Area, Western Crane County, Texas.

The Sand Hills area of western Crane County includes two pools, the Tubb and McKnight, in which production is obtained from Permian dolomite. In a third small area on the northwest side of the Tubb pool, three wells have encountered flush production of high-gravity oil in the upper portion of the Lower Ordovician dolomite, and two small wells produce from a sandstone member of the Simpson, having failed in the Lower Ordovician.

Lower Permian dolomite lies unconformably on the eroded surface of a seemingly complex structural system, which involves Lower and Middle Ordovician sediments. Intermediate beds of probably Upper Ordovician, Silurian, and Devonian ages, respectively, appear in a test which was drilled approximately eight miles southeast of the Ordovician producing area.

7. L. A. NELSON, associate professor of geology, College of Mines and Metallurgy, El Paso: Paleozoic Stratigraphy of the Franklin Mountains of West Texas.

The Franklin Mountains are located within a region that is bounded on the east by longitude 104°30′ W., on the west by longitude 109° W., on the south approximately by latitude 31° N., on the north approximately by latitude 34° N. From just north of El Paso the Franklin Range trends almost parallel with the 106°30′ meridian to a point about 4 miles north of the Texas-New Mexico boundary line.

The Franklin Mountains are eroded block mountains typical of the basin-and-range structure of the southwestern United States. The west side is a steep dip slope developed principally on beds of limestone. The east side is a fault scarp.

The Paleozoic stratigraphic section, which aggregates 5,600–7,000 feet in thickness, is as follows: Permian, Wolfcamp formation; Pennsylvanian, Magdalena formation; Mississippian, Helms formation; Devonian, Canutillo formation; Silurian, Fusselman limestone; Ordovician, Montoya and El Paso limestones; Cambrian, Bliss sandstone. The section is overlain by the Comanche and rests, in places, on pre-Cambrian granite and at other places on the Llanoria quartzite.