Some Geological Features of Irvine Ranch, by G. C. KUFFEL, Shell Oil Company, Los Angeles.

Results of surface mapping, seismic shooting, and core drilling have disclosed some geologic features of the Irvine Ranch, Orange County, California. The explored area may be divided into the alluviated Irvine Plain and the uplifted San Joaquin Hills. The stratigraphy is complicated by convergence and rapid lateral change reflecting the varying environments of deposition which include both marine and continental conditions. Isopach maps have been prepared for the Cretaceous, Paleocene, and Eocene, "Sespe" and lower Miocene, and middle Miocene strata. Although the striking structural feature of Irvine Ranch is the San Joaquin Hills uplift, a study of the surface map shows that faulting is of more importance than folding. The complex stratigraphy and structure added to the difficulties of the geophysicists working in Irvine Plain where reflections in many places were poor. A generalized structural map is presented.

Geology of Central Panamint Range, by D. H. SEARS, Shell Oil Company, Bakersfield.

The area is west of Death Valley, between Stovepipe Wells and Wildrose Canyon, a distance of 25 miles. Archean gneiss, exposed in two small areas, one at Wildrose Station, one on south flank of Tucki Mountain, is overlain by a 2,000-foot series of meta-graywackes and meta-conglomerates best exposed in Wildrose Canyon (Surprise formation? Upper Algonkian), and widely exposed 3,000 or more feet of younger series of variably metamorphosed graywacke, shale, conglomerate, dolomite, and gypsum (Telescope group? Upper Algonkian).

East-dipping Paleozoic strata make up the east flank of the range: Lower Cambrian, Noonday dolomite (200–1,000 feet), Johnnie formation (2,500), Sterling quartzite (1,500), Wood Canyon formation (2,900); Middle Cambrian, Cadiz formation (700), Bonanza King formation (1,250), Racetrack dolomite (1,950); Upper Cambrian, Nopah formation (1,700); Lower Ordovician, Pogonip formation (1,950); Middle Ordovician, Eureka quartzite (400); Upper Ordovician, Ely Springs dolomite (1,300); Silurian (?), Hidden Valley dolomite (?) (700); Devonian, Lost Burro formation (1,500). Post-Devonian strata are not yet mapped. Total thickness, Cambrian through Devonian (19,550), of which 13,650 feet are Cambrian.

A 12-mile-long quartz monzonite intrusive of presumed Nevadan age near the center of the range appears laccolithic.

Structural features include the east-dipping monocline of Paleozoic sediments on the east flank of the range, two northwest-trending anticlines in Algonkian strata on the west and south flanks of Tucki Mountain, and widely prevalent flat to low-angle faulting.

Geology of Railroad Valley and Vicinity, Nevada, by R. C. SPIVEY, Shell Oil Company, Los Angeles.

Railroad Valley is situated near the center of the eastern half of the Great Basin where more than 20,000 feet of limestone, sandstone, and shale were deposited in a Paleozoic miogeosyncline. During Mesozoic time the region was uplifted and served as a barrier between basins on the east and west. Fresh-water sediments and volcanic rocks may have been deposited, however, for Cretaceous beds of this kind have been identified a short distance northwest. In Tertiary time the basin-and-range structure now found in the Great Basin began to form. Sediments were deposited in the basins by lakes, streams, landslides, and other agencies, and volcanic material was widely distributed in the basins and on the ranges. Oil production at the Shell Oil Company's Eagle Springs Unit 1 is from welded tuff, probably Tertiary in age.

Old River Field, Kern County, California, by HORACE HARRINGTON, Superior Oil Company, Bakersfield.

The Old River field is located approximately 8 miles southwest of Bakersfield, $1\frac{1}{4}$ miles south of the East Gosford field, and 3 miles east of the Ten Section field. The field was discovered in December, 1953, and all production to date has been developed in the upper part of the Stevens sand.

Accumulation is attributed to lenticularity of upper Stevens sand members both laterally and updip on a broad, south-plunging nose developed in late Pliocene time. None of the field wells has penetrated the entire Stevens section, but an abandoned well one mile south of the field encountered a thickness of 1,750 feet, predominantly sand with minor shale interbeds.

The section is similar to that of the East Gosford and Bellevue fields, with upper Miocene-lower Pliocene shales grading eastward to a predominantly sand section. The Stevens sand is therefore largely isolated from the East-side Chanac-Santa Margarita series by a shale barrier.