The independent producer's situation will not improve, and his role in the industry will diminish. All operators will need to increase efforts to cut costs and increase efficiencies. True professional management will develop.

While Administration's new tax proposals may adversely affect profits, we can expect our favorable local market for petroleum products to stimulate and maintain a high level of operations.

LOWELL E. REDWINE, consulting geologist: Morphology, Sediments, and Geological History of Basins of Santa Maria Area, California

This basin study includes several, elongate, in places deep, structural basins trending northwesterly to westerly, as shown on the pre-Tertiary "basement" contour map. Large faults trend similarly. Cross sections suggest that these faults and others as yet unknown or incompletely known probably have brought different basin segments into their present juxtapositions by lateral slip. True *paleogeologic* reconstructions of basin conditions thus would require complex palinspastic restorations. Lacking these, we can trace basin history only crudely with the aid of *subcrop* maps representing pre-Vaqueros, pre-Pt. Sal, pre-Monterey, and pre-Sisquoc time. Suggested depositional environments progressed from above sea-level in the Oligocene to water depths of more than 4,000 feet in Lower Miocene, 1,000 feet to 1,500 feet in Middle and Upper Miocene, 1,500 feet to sea-level in Pliocene, to above sea-level in Pleistocene. Miocene cherty oil reservoirs probably are genetically related to diatomite deposited under conditions possibly similar to those now found in the Gulf of California. Tracing cherty and other reservoir facies probably requires true paleogeologic analysis. Until sufficiently sophisticated geological studies of one of California's oldest producing areas are available, the currently fashionable view that onshore California offers little for economic oil exploration is at best premature.

SARGENT M. REYNOLDS and SARGENT T. REYNOLDS, consulting geologists: Midland Fault, an Eocene Subsurface Fault, Delta area, California

The Midland fault can be traced in the subsurface about 30 miles from the Bunker gas field southward through the Rio Vista field. This steeply dipping normal fault has a maximum vertical displacement of 3,000 feet, all movement occurring between late Paleocene and early Oligocene time. Up to 2,000 feet of Meganos, present on the downthrown western side, is absent on the eastern side. This earliest movement was contemporaneous with deposition or occurred during the post-Meganos pre-Capay regional uplift and tilting. Intermittent movement was contemporaneous with Capay and Domengine deposition, with greater thicknesses being deposited on the downthrown side. There has been a maximum of 600 feet of post-Domengine pre-"Markley" Gorge (Oligocene?) movement. Many gas accumulations of the area are modified or controlled by the Midland and adjacent smaller faults.

KELVIN S. RODOLFO, Allan Hancock Foundation, University of Southern California: Suspended Sediment in Southern California Waters

The South Coastal area of California includes all basins draining into the sea between Rincon Creek (Ventura County) on the north and the American part of Tia Juana Basin on the south, about 28,500 square kilometers. Annual runoff over the past three decades, and suspended load of the 1961–1962 season were determined for the Los Angeles, San Gabriel, and Santa Ana basins, 10,000 square kilometers constituting 35 per cent of the South Coastal area. Extrapolation suggests that 700,000,000 cubic meters of water with a suspended and dissolved load of 2,760,000 metric tons (2,760,000,000 kilograms) is supplied annually to the ocean by southern California. Approximately 580,000 tons coarser than 64 microns forms beach and nearshore sediment. Estimated 1,640,000 tons, coarser than 1 micron, are dispersed widely over the continental shelf and beyond. The remaining 540,000 tons finer than 1 micron could not be analyzed by existing techniques. Centrifuge concentration of marine waters and optical counts of mineral particles reveal fairly uniform suspension values of several milligrams per liter close to shore, decreasing to several tenths of a milligram at the shelf edge 70 miles offshore. Suspension grain sizes parallel this trend, grading from coarse silt nearshore to fine silt and clay at the shelf edge.

ANTONIO GARCIAS ROJAS, manager of exploration, Petroleos Mexicanos: Petroleum Geology of Baja California, Mexico

The Peninsula of Lower California forms a geographical and geological unit which extends south of the westernmost limit of the Mexican-U. S. border.

Granite outcrops in most of the northern part of the Peninsula, but there are narrow belts of sedimentary rocks, of Tertiary and Cretaceous age, which do not present oil possibilities (the Cretaceous rocks show, in general, metamorphism of varying degree).

South of the 28th parallel, which crosses the Sebastian Vizcaino Gulf, most of the area is covered by volcanic rocks, mainly pyroclastics, but a well defined geosyncline is found on the western part of the Peninsula, with important developments of marine sedimentary rocks of Tertiary and Cretaceous age.

Based on the existence of these marine sediments, the oil and gas possibilities of the Peninsula have been studied, but no oil or gas seepages have been found, and although a total of 13 wells with depths ranging from 1,400 to 9,500 feet have been drilled, only one had important gas shows.

Present status does not encourage an intensive exploration program, but it is believed that more work will be done when other areas, with better oil or gas prospects, begin their decline.

FREDERICK L. SCHENCK, Robert H. Ray Company, Division of Mandrel Industries: Delineating Low-Velocity Lenses

The end of a low-velocity lens diffracts energy emerging after reflection at a lower level. Conventional interpretive treatment of such energy as an undiffracted reflection could lead to serious inferences of non-existent structure. Constant moveout down the record is the main criterion for the diffracted reflection situation. The diffractive source, assuming the velocity in the surrounding material to be known, is found as the envelope of emergent travel paths. Reflected energy from the top of the feature, if recognized, can be solved for delineating the upper limit of the body. The thickness can be estimated from observed delay times. For discovering and delineating low-velocity lenses, long reflection spreads should be used.

FREDERICK L. SCHENCK, Robert H. Ray Company, Division of Mandrel Industries: Refraction Solutions by Wavefront Targeting

Emergent wavefronts can be developed from travel time data when the velocity is known by applying