

least 2,000 feet of poorly bedded sandstone, unconformably overlies the Oligocene and Eocene strata in the South Slough syncline and has been folded along the same axis to a lesser degree than older formations. Pleistocene terrace and estuarine deposits cover the coastal plains and major valley bottoms.

Coal was first mined in 1854, and production reached 100,000 tons a year during the early part of the century, but since the increased use of fuel oil during the twenties coal has been mined only for local needs. The total production for the field is probably of the order of 3 million tons.

The Beaver Hill bed, lowest coal of the upper group, has been mined more extensively than any other bed; with a few exceptions other beds of the upper and lower groups have not yielded great tonnages; these beds are ordinarily higher in ash and contain more numerous partings.

Detailed mapping and drilling on four properties have resulted in developing 541,000 tons of measured coal; an additional 800,000 tons was indicated and 3,200,000 tons was inferred. More than 160 mines, prospects, and outcrops were examined and are described; 60 of them were sectioned and sampled. Coos Bay coal is subbituminous in rank, with a heating value of 9,000 to 10,000 B.t.u. per pound as received, with a low sulphur content, moderate percentage of ash, and a relatively high moisture content. The coals of the lower group have a higher heating value and a higher ash content, but mining conditions are relatively unfavorable.

MORTIMER KLINE, Oil for the Lamps of America

The author was recently general counsel for the Petroleum Reserves Corporation at Washington, D. C. He discussed the future of the development of the great oil reserves of the Middle East, emphasizing the importance of American participation and outlining the efforts of the Government to improve the position of American interests. He considered the acquisition of the early concessions, described their present control and the great potentialities of the region, and pointed out the need for more global thinking on the part of most American geologists.

JOHN C. HAZZARD, Some Features of Santa Susana Thrust, Vicinity of Aliso Canyon Field, Los Angeles County, California

This paper discusses a 6 mile segment of the Santa Susana thrust, a feature in which the northern block is thrust southward for 18 miles along the southern side of the Santa Susana Mountains. In part the surface trace of the thrust is relatively straight but in canyons such as Mormon and Brown's Canyons it is extremely lobate, due to deep dissection of its relatively flat part. Likewise in Aliso Canyon the fault is exposed in a small fenster. Features of the overthrust sheet include large scale folding and fault imbrication as well as several transcurrent or tear faults along which there has been both vertical and horizontal displacement.

Studies based on outcrops of the thrust plane and subsurface data indicate that in transverse cross-section the structure has the form of a crude inverted "L." The short segment varies from gently north-dipping to slightly south-dipping. There the thrust plane is smoothly irregular with culminations or structural highs developed in Aliso, Mormon, and Brown's canyons. The long segment of the "L" is steeply north dipping and well data show that this segment maintains its near-vertical character to at least 6,900 feet subsea. A hypothetical northward flattening at an undetermined depth is suggested.

An extensive shear zone, developed below the main plane of movement, is considered a portion of the static block. This zone includes material from all of the stratigraphic units recognized below the thrust. A minimum estimate of 8,000 feet is made for the north to south displacement; the vertical displacement appears to be close to the same amount.