

2. A. I. LEVORSEN, past-president, A.A.P.G., chairman A.A.P.G. research committee, Tulsa, Oklahoma: Research Program of The American Association of Petroleum Geologists.

3. E. E. ROSAIRE, Subterrex, Houston, Texas: Geochemical Prospecting (abstract).

Geochemical prospecting can be divided into surface and subsurface geochemical prospecting.

The former relies upon the analyses of soil samples collected along the surface of the earth at shallow depths, and yields two-dimensional information and maps. Surface geochemical anomalies are associated with the presence and areal extent, but not the depth nor the relief, or favorable structure. Surface geochemical prospecting is further divided into topsoil and subsoil geochemical prospecting.

Subsurface geochemical prospecting relies upon the analyses of well cuttings and cores. It yields information in one dimension, along the vertical, and is commonly referred to as geochemical well logging.

These various forms of geochemical prospecting are discussed, and their salient features described. The geochemical data permit the correlation of various geological and geophysical phenomena which previously appeared unrelated, and, in addition, have brought to light, for the first time, other phenomena of economic as well as theoretical interest.

4. PAUL P. GOUDKOFF, consultant, Los Angeles: Facies Changes in the Upper Miocene of San Joaquin Valley (abstract).

The paper deals with the Delmontian and upper Mohnian strata of the San Joaquin Valley, which are well known for their extreme lithological variations.

On the basis of lithological and paleontological studies of material obtained from 150 wells and several surface sections the whole column has been divided into a number of units representing definite time divisions. An attempt has been made to define the principal types of micro-faunal assemblages found in different parts of each unit, to appraise the ecological significance of these types and to survey their distribution in relation to lithological variations of the sediments of each unit.

The results of the study are illustrated by lantern slides showing: (1) lithological features and organic content of the recognized facies; (2) areal distribution of the facies; and (3) isopachous maps of the Delmontian and upper Mohnian beds.

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5. W. F. BARBAT, Standard Oil Company of California, Los Angeles: Pliocene of the San Joaquin Valley, California (abstract).

The Pliocene of the San Joaquin Valley is defined and a description given of the sediments and the invertebrate fauna. Attention is called to the diastrophic history, the geologic occurrence of land vertebrates, and to the physical conditions under which the sediments were deposited.

To facilitate the presentation of the subject several new names for stratigraphic units, faunal zones and diastrophic disturbances must, unfortunately, be used. To chronologize the Pliocene it will be necessary to refer to some heretofore unused time names. All new names, however, are used informally.

6. MAX STEINEKE, Standard Oil Company of California, Los Angeles: Arabian Geology and Topography (abstract).

General map of Arabia shown as well as moving pictures of typical desert scenes.

7. FRANK HORNKOT, consultant, Los Angeles: Interpretations of Core Analyses (abstract).

Permeability is a measure of the fluid passing ability of a porous material. Porosity is a measure of the void space in the sand that can be occupied by a fluid. Water saturation of a sand is the total amount of water in per cent present in the void space in the porous material. This includes the connate water, drilling fluid, and actual water present. The larger the diameter of the core sample, the more accurate the determination. Oil saturation is only of comparative value, because in deep samples of light gravity oils, only the residual oil is present, the other lost because of temperature and pressure conditions present. Permeability and porosity determinations for the entire oil sand area plus bottom-hole pressure from which a specific productivity index can be determined make it possible to predict fairly accurately the gross barrels per day per foot of sand.

8. J. Q. ANDERSON, Union Oil Company of California, Los Angeles: Comparative Columnar Sections of the Domengine-Arroyo Hondo Sandstone Intervals between Cantua Creek and Waltham Canyon, Coalinga District, California (abstract).

Presentation of a series of slides showing 13 hand-leveled surface columnar sections of the Domengine-Arroyo Hondo sandstone intervals measured at varying distances between Cantua Creek and Waltham Canyon. Correlation of all sections is based on the "black pebble bed" or Domengine Reef. Discussion involves demonstration of lateral variation and facies changes in lithology of both intervals. Deals briefly with Domengine-Kreyenhagen contact, fossil occurrences, and contact relations of the Arroyo Hondo sand with Arroyo Hondo shale and the Moreno shale.

9. HARRY B. ALLEN, student, University of California at Los Angeles: An Eocene Section at Point of Rocks, Kern County, California (abstract).

The sedimentary sequence and formational age of the Eocene rocks in northwestern Kern County have been the subjects of controversy. The results of recent field and paleontological work, conducted in an attempt to clarify this problem, are presented in this paper.

10. ROGER REVELLE, Scripps Institution of Oceanography: Problems of Sediment Transportation off the Coast of California (abstract).

Several kinds of evidence obtained in recent investigations suggest that water movements of sufficient strength to move sand grains over the bottom may exist at least occasionally at all depths in the open sea. Sediments are absent from topographic highs rising one or two hundred fathoms above the general level of the sea floor even at depths of two miles or more. Thin layers of well sorted fine sand intercalated with thicker layers of clayey muds are characteristic of inshore basins off Southern California at depths of over half a mile and at distance of thirty or more miles from land. Current velocities of nearly one-half knot were measured within two feet of the bottom at 1,100 fathoms in the Santa Cruz Basin south of Santa Cruz Island, 500 fathoms below the sill or threshold of the basin. Other similar measurements show that the strongest bottom currents shift irregularly in both speed and direction. They may be regarded as representing lateral turbulence or eddy motion in which eddies have vertical axes and are perhaps a few miles in