hill topography on the south side of Cuyama Valley, California. Further investigation of this significant anomaly led to the mapping of an anticline closed on three sides with indications of the presence of faulting on the fourth side to aid in creating a trap. On the basis of this information a test well was drilled which resulted in the discovery of the South Cuyama oil field May 4, 1949. Illustrations are shown on the key seismograph cross sections and some of the difficulties of the work discussed. The original seismograph contour map as well as the map drawn from well data are shown to enable an evaluation of the seismograph prediction. As of June 30, 1953, the field contained 235 producing wells and had a cumulative production of 44,172,749 barrels of oil and 29,312,888 Mcf. of gas

19. WALLACE L. MATJASIC, Honolulu Oil Corporation, Bakersfield. Case History of Wild Goose Gas Field, Butte County, California.

The discovery well of the Wild Goose gas field was drilled and completed in 1951 on a structure located by a reflection seismograph survey conducted in 1950. An additional seismograph survey was made subsequent to discovery to define better the structure for future development. Two seismic cross sections and a contour map based on the original reflection data are shown, along with an aeromagnetic map which was made after the discovery.

The producing sands are in an interval between the Forbes shale of upper Cretaceous age and the overlying Capay shale of Eocene age.

S.E.P.M. ABSTRACTS

1. W. L. NOREM, California Research Corporation, La Habra, California. Classification of Spores and Pollen for Paleontologic Correlation.

One of the more important recent developments in micropaleontology is the use of plant spores and pollen for correlation purposes. These minute bodies are found in many sediments previously considered barren of diagnostic fossils. The classification of spores and pollen presents a complex problem because of the large number of types that represent almost every phylum of the plant kingdom and cover the geological time span from the Paleozoic to the present.

Classification under the International Rules of Botanical Nomenclature is confusing because materials of known affinities are classified according to phylogenetic relationships and those of unknown parentage according to morphological characteristics. No clear-cut distinction is made in the nomenclature between fossils classified in the natural and the artificial systems. A natural system is not necessarily the most satisfactory for the stratigraphic paleontologist because of the vast knowledge of systematic botany required for its application.

If fossil spores and pollen are to be brought quickly into usefulness for paleontologic correlation, a system of classification that is easy to use must be developed. Such a system must have a minimum possibility for confusion in its application. It must be comprehensive enough to cover all spore types from the Paleozoic to the present. It should contain the elements of a key for quick and easy reference. Like the International Rules of Botanical Nomenclature, its use should be universal so as to permit the free interchange of information on spores and pollen.

The classification based on morphological characteristics and proposed by G. Erdtman contains the elements of such a system. It must, however, be expanded in scope before it will be complete.

This artificial system is not intended to replace the natural system under the International Rules in paleobotany but it is intended as a practical substitute for use in stratigraphic paleontology. The fossil spores or pollen can be reclassified under the natural system when and if the affinities are ascertained.

2. K. O. EMERY, University of Southern California. Size Distribution of Gravels.

More than 60 samples of gravel from beaches of Mexico and southern California were mechanically analyzed in the field by use of a new method. Median diameters range between 20 and 800 mm. Trask sorting coefficients are characteristically lower than 1.5 and have a median of 1.25. Comparison with published analyses shows that the marine beach gravels are far better sorted than gravels from streams and alluvial fans. The difference is sufficiently great that sorting may be a useful supplementary means of determining the environment in which ancient conglomerates were deposited.

3. JOSEPH J. GRAHAM, Stanford University. Eocene Foraminifera from the Woodside District, San Mateo County, California.

An Eocene foraminiferal assemblage from the Woodside district near Redwood City, San Mateo County, California, is described and its similarity to Cushman and Siegfus' Canoas siltstone faunule from the type area of the Kreyenhagen shale of California noted.

4. RICHARD STONE, University of Southern California. Recognition of Playa Sediments in the Geologic Column.

Playa sediments are sometimes reported in oil-well cuttings, particularly in sediments whose age