The Golden State

Geology of Northern California. EDGAR H. BAILEY, Ed. California Division of Mines and Geology, San Francisco, 1966. 520 pp., illus. $6.

This volume was compiled for the National Meeting of the Geological Society of America held in San Francisco in November 1966; it supplements *Geology of Southern California*, which was prepared for a similar meeting in Los Angeles in 1954. A collection of generously illustrated papers by selected authors, it is a blend of historical and current thought so well documented that anyone wishing to undertake geologic research anywhere in Northern California will find it invaluable. The greatest demand for the book, however, may well be from an interested public, for California's development as a state has been profoundly influenced by its geology, starting with the discovery of gold in its streams and the Mother Lode and continuing with the extensive exploration and development of its oil fields in the Great Valley, the Coast Ranges, and more recently offshore. The spectacular scenery of the Sierras is well known, and laymen will appreciate the geological descriptions here given.

But it is the shaking earth, reminding both geologists and the public of latent forces that are unleashed intermittently, which most strongly captures the imagination. The San Francisco earthquake of April 1906 spurred earnest research into the causes and effects of such earthquakes. Much of the movement occurred along the large fault, the San Andreas rift, which bisects the state as far north as Tomales Bay just north of San Francisco and then trends offshore parallel to the coast as far north as Cape Mendocino. Although there is general agreement that the western side is moving northward, the magnitude of the accumulated movement is debatable, and it is discussed in two chapters of this book.

The area dealt with in this volume extends to the Transverse Ranges and to the south end of the San Joaquin Valley and the Sierra Nevada Range. The physiographic divisions treated include the Klamath Mountains in the north, the southern Cascade Range and Modoc Plateau, the spectacular Sierras, the Sacramento and San Joaquin valleys, and the Coast Ranges. The offshore is not slighted, for both the geologic map and the text cover the submarine topography and potential ore deposits of the offshore islands, the continental shelf, and the continental slope. The latter part of the book contains detailed and well-illustrated road logs of field trips that radiate out from San Francisco. The trips traverse routes to the Peninsula south of the Bay area and on to Hollister, to the Yosemite Valley, to Point Reyes, to Clear Lake, and into the northern Coast Ranges. An excellent generalized geologic map of the entire state, scale 1:2,500,000, is folded into a pocket in the back of the book.

The editor, Edgar H. Bailey of the U.S. Geological Survey, and his editorial committee are to be complimented on the selection of papers and the careful editing. The California Division of Mines is to be commended for producing such an attractive volume at so moderate a price.

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A Study in European Prehistory

Le Solutréen en France. PHILIP E. L. SMITH. Laboratory of Prehistory, University of Bordeaux, Bordeaux, France, 1966. 465 pp., illus. Paper, F. 120.

According to the author, this massive study (a revised version of his Harvard doctoral dissertation) is an attempt to organize and evaluate all extant data on the French Solutrean, in order to refine our understanding of the nature of this manifestation and its geographic and temporal position. In addition to a detailed description of Solutrean assemblages from over 140 archeological sites (which constitutes almost 300 pages of the book), the author presents a history of research on the Solutrean, a consideration of its temporal position, a discussion of Solutrean techniques of stone-tool manufacture, a delineation of geographic areas of apparent relative stylistic similarity within some Solutrean stages, a scheme for the interpretation of the spread of Solutrean developments from a center of origin to surrounding areas, and some tentative conclusions about relationships between the Solutrean and earlier industrial complexes. The book represents a monumental, even unique achievement. No other European industrial complex has ever been examined with such thoroughness and attention to detail. The comparative material that Smith presents includes an examination of collections from England and Belgium and a general discussion of the Spanish data, so that the work is actually much more encompassing than its title suggests; it is the definitive study of the Solutrean.

In a study of this scope it is always possible to find sections that need qualification or rectification. Happily, the praiseworthy aspects of Smith's book far outweigh the others. I shall confine myself, in this review, to brief mention of some of the work's soundest attributes and some aspects that I think could stand revision in future editions. It must be said that the length, thoroughness, and complexity of the study are so great that there has been ample opportunity within its limits for Smith to approach single problems in a variety of ways, with a diversity of methodological tools. Often he has reached theoretical insights whose implications, had they been translated into practice, would have obviated most of my negative criticisms.

Among the admirable features of the book are François Bordes's sensitive translation of the text into French and Pierre Laurent's tool drawings. The high quality of Laurent's illustrations adds considerably to the value of the book as a research tool, as well as increases the intelligibility of artifact descriptions in the text. Bordes conveys nuances of American anthropological usage usually missed by French pre-