

## GEOLOGICAL RESEARCH IN CHINA

## The Geology of China

By Prof. J. S. Lee. Pp. xv + 528. (London: Thomas Murby and Co., 1939.) 30s. net.

THE remarkable growth of geological knowledge concerning China commenced with the foundation of the National Geological Survey, under the able directorship of the late V. K. Ting, in 1915. Its unbroken series of publications appeared in 1920 and those of the Geological Society of China in 1922. The first volume of A. W. Grabau's "Stratigraphy of China" was issued in 1924, the second in 1928, but invaluable as this exhaustive compendium was for a time, it soon became out of date as new results were accumulated, mainly by Chinese geologists whom Ting and his associates had trained. As the years passed, contributions rapidly increased, for provincial surveys, universities and foreign authors of many nationalities added their quota to the literature.

A new summary was overdue and it has been admirably accomplished by Prof. J. S. Lee, himself a pioneer of the new movement. The book is not, as its title might indicate, a text-book of regional geology of the stereotyped kind: it is rather a collection of essays, planned on a common 'structural' basis, in which all the essential facts are incorporated and their significance exposed.

In the successive chapters of Part 1 the following topics are discussed: the natural physiographical units of China and adjoining territories; the rocks of its ancient floor; its marine transgressions with the succession of their sediments, their characteristic fossils and the chronology of their movements; the geotectonic aspects of the Cathaysian geosynclines and geanticlines, as well as the history of the east-west fold zones which interrupt them at regular intervals. Descriptions of certain types of shear-forms and of their influence upon the existing framework of eastern Asia follow. Studies such as these, continental in their scope, lead naturally to wider inquiries still, and Chapter viii contains an analysis of the facial traits of the earth as a whole, to which is added an exposition of the author's views on the origin of tectonic movements and marine transgressions in general. These, advanced in logical sequence and entering into controversial geodynamical problems, evade a bridged treatment and are best considered as a whole. Certain notable conclusions, however, are briefly stated as follows:

"All tendencies to shearing movement on the continents are to be reduced to two components:

the one towards the equator and the other towards the west. The latter is more pronounced in, if not restricted to, the low latitudes" (p. 351).

This, as the author admits, "sounds strikingly Wegnerian". Again:

"As a whole, then, the surface strain of the earth can be explained by an adequate increase of rotational speed" (p. 358); and

"The data thus assembled, when correlated with the 'pulsations' of A. W. Grabau . . . seem to favour the conclusion that it is the continued contraction of the earth that has caused the increase of its rotational speed" (p. 364).

These forcible speculations add value to and widen the appeal of the work as a whole, which still remains the only available, concise review of geological research in China as it stands to-day. Prof. Lee has succeeded in the extremely difficult task of condensing into comparatively little space a great amount of widely scattered stratigraphical and structural information, without sacrificing a lucid continuity of style for the sake of brevity.

Part 2 contains two chapters only, one of which is devoted to the contentious problem of China's Pleistocene climate. The other is headed "Regional Stratigraphy", and in it the larger stratigraphical units of fifty-one separate areas, ranging from Jehol and the Inshan Range in the north to Kuangsi and Kuangtung in the south, from South Manchuria and Chekiang in the east to Kansu and Yunnan in the west, are tabulated in natural successions with short lithological details and lists of leading fossils. How far the omission of subdivisions, and in rare cases of even larger units, is justifiable on grounds of simplification is a matter of opinion, but such arbitrary classifications are rarely entirely satisfactory. This one would have been improved by explanations of the origin of the terms and by the insertion of co-ordinates of the localities mentioned. As extensive tracts in China still await survey, modifications of the lists may be anticipated in future editions.

Each chapter is followed by its own selected bibliography, which would have been more serviceable had numerical references been given in the text and index. Illustrations total ninety-three items, including maps, sections and half-tones.

Geologists concerned with the great problems of continental movement will peruse the book with advantage; for students of Asiatic geology, whether their work or only their inclination leads to the East, it is an indispensable guide.

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