

REVIEWS

HUBERT C. SKINNER
TULANE UNIVERSITY

LECTURES ON GEOLOGY, by John Walker; edited with notes by Harold W. Scott. Published by University of Chicago Press, Chicago and London, 1966, xlvii + 280 pp., \$8.50

Geology, the youngest science, was conceived in the city of Edinburgh early in the fourth quarter of the eighteenth century. It was nurtured within one of the most remarkable intellectual climates ever formed, *The Edinburgh Circle*. Among the members of this circle were: Robert Adam, architect; Joseph Black, chemist; John Clerk, sen. and jun. of Eldin; Adam Ferguson, philosopher; Sir James Hall, experimental chemist; James Hutton, geologist; John Playfair, mathematician and physicist; Adam Smith, writer; and Dugald Stewart, philosopher.

In the spring of 1802, John Playfair made the first attempt to delineate the singular factors which contribute to the unique position of geology among the sciences; stating:

"... on account of the complexness of its subject, geology is the youngest of the sciences."

Playfair was well qualified to comment; he was present at the birth of geology, he was there throughout the formative years of the fledgling science, and he became its foster father when Hutton expired in 1797. His belief that James Hutton was of first importance is unmistakable.

In *Lectures on Geology* the claim is made that the "real father of geological teaching" was John Walker, regius professor of natural history at the University of Edinburgh and a lesser known contemporary of the widely recognized "Founders of Geology," namely James Hutton, John Playfair and Sir James Hall. In fact, extant registration lists reveal that Playfair, Hall and Robert Jameson were numbered among those who attended Walker's lectures at the University. It seems certain that he had some effect on the thinking of these three men, but the conspicuous absence of James Hutton's name from these lists or any other evidence of direct interchange between Walker and Hutton is most

significant. If we focus our attention on actual innovations in fundamental geological thought rather than on commentary or lectures on geology and subjects related to geology, the answer emerges clearly. James Hutton's perception of the *vast continuum* and his search for and discovery of field evidence for his concept of the *unconformity* remain unequalled as contributions to the basic theory of geology during his lifetime. After analytical comparison of the work of Hutton and that of Walker, it seems to this observer that James Hutton's position in the history of geology becomes stronger and more remarkable.

John Walker's *Lectures on Geology* are of great interest and this book thoroughly documents his significance as an early *teacher* of natural history and member of the Edinburgh scientific community. We are grateful to Professor Scott for publishing the *Lectures* and making them available for general study and evaluation.

JAMES HUTTON—THE FOUNDER OF MODERN GEOLOGY, by Edward Battersby Bailey. Published by Elsevier Publishing Co. Ltd., Amsterdam, London and New York, 1967, xii + 161 pp., \$9.00

This book is a definitive study of Hutton's three volume work, *Theory of the Earth*, chapter by chapter, with commentary and explanatory re-statement where Hutton's prose was too lengthy or obscure. Sir Edward's intimate knowledge of the geology of Scotland makes his commentaries on Hutton's deductions (and on the many difficulties encountered by Hutton in developing his interpretations of basic geological problems) most authoritative and reveals the brilliant quality of Hutton's observations, arguments and conclusions. From this analysis Hutton emerges with even greater significance to the history of geology than before. Everyone interested in the early development of geologic thought should own and study this volume.

STUDIES ON GLACIERS, preceded by the DISCOURSE OF NEUCHÂTEL, by Louis Agassiz translated and edited by Albert V. Carozzi. Published by Hafner Publishing Company, New York and London, 1967, lxxi + 213 + x pp., 18 plates (14 with overlay sketches), \$27.50

This volume provides the first English translations of Agassiz's classic *Etudes sur les Glaciers* and his momentous presidential address before the Société Helvétique des Sciences Naturelles at Neuchâtel on July 24, 1837, in which he first disclosed his ideas about glaciers. The text is preceded by a detailed description of the famous controversy which followed publication of the book and ended, after a bitter and powerful struggle, with general acceptance of Agassiz's concept of an Ice-age. The book and the atlas of plates with overlay sketches is handsomely printed and quite pleasing.

ON THE ORIGIN OF SPRINGS, by Pierre Perrault; translated by Aurele LaRocque. Published by Hafner Publishing Company, New York and London, 1967, vi + 209 pp., \$15.00

This translation of the rare "first book on hydrology" is a welcome addition to the historical literature of the geological sciences. Perrault was the first to show that rainfall is sufficient cause for the flow of rivers and springs, making this volume of primary importance to the history of hydrology. Its usefulness is enhanced by the translator's annotations and the index which is appended.

CARBONATE ROCKS, edited by George V. Chilingar, Harold J. Bissell and Rhodes W. Fairbridge. Published by Elsevier Publishing Company, Amsterdam, London and New York, 1967; part A, v + 471 pp.; part B, ix + 413 pp.; each volume, \$27.00

These two volumes comprise part nine of the *Developments in Sedimentology* series. The work is the first comprehensive treatment in English of this extremely important group of rocks which constitute 10 to 15% of the sedimentary rocks of the crust. The first part concentrates mainly on the origin,

occurrence and classification of carbonate rocks, including sites and characteristics of modern carbonate deposition, carbonates as oil-reservoir rocks, and carbonates as climatic indicators. The second part stresses physicochemical aspects of the carbonate rocks, especially the low-temperature types. It includes sections on the origin of petroleum in carbonate rocks, and the physical properties and economic uses of the carbonate rocks and minerals.

ESSAYS IN GEOMORPHOLOGY, edited by G. H. Dury. Published by American Elsevier Publishing Company, Inc., New York, 1966, xi + 404 pp., \$14.00

Nine essays by ten leading geomorphologists are included. The unifying theme of the symposium is the systematic approach to morphological problems. Six essays relate to specific study areas; the last three are wholly thematic.

TUFFLAVAS AND IGNIMBRITES: A Survey of Soviet Studies, edited by Earl F. Cook. Published by American Elsevier Publishing Company, Inc., New York, 1966, xii + 212 pp., \$7.00

A collection of thirty recent papers by outstanding Soviet scientists on Tufflavas and Ignimbrites is presented in this volume, freely edited and amended by Professor Cook, who is chairman of the Earth Sciences Committee of the National Academy of Sciences. The translations from the Russian are by Miriam Carty.

THE ORIGIN OF CONTINENTS AND OCEANS, by Alfred Wegener. Published by Dover Publications, Inc., New York, 1966, x + 246 pp., \$2.00

This is a *new* English translation of Alfred Wegener's classic book, first published in 1915, and one of the most revolutionary books in the history of science. This edition makes available for the first time the translation of the fourth fully revised German edition of 1929.