

Our Bookshelf.

Lord Balfour in his Relation to Science. By Lord Rayleigh. Pp. viii + 46. (Cambridge: At the University Press, 1930.) 2s. 6d. net.

FOLLOWING the death of the Earl of Balfour, F.R.S., Chancellor of the University of Cambridge, which occurred on Mar. 19 last, an obituary notice by his kinsman, Lord Rayleigh, was published in the *Proceedings of the Royal Society*. This memoir was limited to an account of Lord Balfour's early history and mental development, his scientific and philosophical thought, and his administrative work for scientific, industrial, and medical research. Quite justifiably it was soon realised that, beyond strictly scientific circles, there was an interested public desirous of knowing about those very matters detailed therein, their kind and substance. Accordingly, the memoir has been republished, with a photograph as frontispiece.

In all probability the public referred to would have welcomed more about this many-sided personality in fields of knowledge and inquiry which embraced science. The earlier part of the memoir recalls Balfour's upbringing, and the springs of scientific interests which welled up in the family brotherhood and sisterhood and immediate connexions. As regards the latter, Lord Salisbury, sometime Prime Minister, was Balfour's uncle; Lord Rayleigh (father of the writer of the memoir), his brother-in-law. We are told that throughout his life Balfour had the highest admiration for Darwin, "because", he said, "he was not a partisan—he really wanted to find out the truth—an attitude of mind seldom found among men of science, and never among theologians". Rather contrariwise, an extract from Lady Rayleigh's journal, June 16, 1892, records that "Paderewski was at the Royal Society soirée last night, and in discussing it Arthur remarked of the scientific guests, 'They are the people who are changing the world and they don't know it. Politicians are but the fly on the wheel—the men of science are the motive power'".

Throughout this study no passing allusion is made to Lord Kelvin, yet contact with Balfour must have been close and cordial, and fraught with inherent interest. He was, in fact, president of the Royal Society at the date of the soirée mentioned above.

State of Arkansas: Arkansas Geological Survey. Bulletin 3: Geology of the Arkansas Paleozoic Area, with especial reference to Oil and Gas Possibilities. By Carey Croneis. Pp. xx + 457 + 45 plates. (Little Rock, Ark.: Arkansas Geological Survey, 1930.)

THE area covered by this work is some 25,000 square miles in the central, northern, western, and north-western parts of the State of Arkansas, constituting the highlands and embracing the well-known physiographic elements the Ozark Plateau, the Arkansas River Valley, and the Ouachita Mountains. The volume is of interest to geologists generally because of the good account of the

different palæozoic faunas given, an account enhanced in value by the excellent illustrations of the characteristic fossils. In fact, the illustrations as a whole are such a conspicuous feature that they may almost be said to make the book. Certainly, some of them depicting field-features would adorn many a well-recommended text-book of physical geology, and it is a pity that they are comparatively lost in a State survey memoir.

With regard to oil and gas possibilities, the Ouachita Province is regarded as unfavourable, the Arkansas Valley implies for the most part dry gas resources, and the southern part of the Ozark highland has a slight chance of oil production. There is a sidelight on the applicability of the carbon ratio theory in connexion with the gas prospects; some of the ratios of the Carboniferous coals are so high as eighty-eight, which should rule out any possible existence of gas-fields; these ratios, in point of fact, are without significance, since some of the largest producing gas-fields are located in such terrain.

This is a readable memoir. It gives a clear impression of the pure and economic geology (in so far as oil and gas are concerned) of a vastly interesting region, and in style and presentation breaks away from the more monotonous conventions of the national survey. There are two maps included, both tectonic, one depicting structural axes of the Arkansas Valley and Ozark Provinces, the other, axes of the Ouachita Mountain Province.

H. B. M.

Sedimentary Petrography: with Special Reference to Petrographic Methods of Correlation of Strata and to Subsurface Oil Geology. By Henry B. Milner. Second (revised and complete) edition. Pp. xxi + 514 + 40 plates. (London: Thomas Murby and Co.; New York: D. Van Nostrand Co., 1929.) 21s. net.

MILNER'S "Sedimentary Petrography" is essentially a laboratory manual and text-book. It incorporates two previously published works by the same author—"An Introduction to Sedimentary Petrography" and "Supplement to an Introduction to Sedimentary Petrography".

In the new volume the author's aim has been to provide a comprehensive text-book of the petrology of all types of sediments, consolidated as well as incoherent. Not only, therefore, is the text of the earlier volumes amplified and brought up-to-date, but also much entirely new matter has been added. Chief among this is a lengthy chapter on the petrography of the consolidated sediments, that is, limestones, shales, etc., as opposed to loose sands. In another new chapter the author discusses at some length the desirability of the employment in the study of soils of the methods of examination of sedimentary rocks dealt with earlier in the text.

The whole bias of the book is admittedly towards the examination of sedimentary rocks by study of their 'heavy residue' content, with emphasis on the economic applications of the results obtainable. Commendable features are the numerous diagrams and plates, and the large