

the large number of persons who have been privileged to collaborate with Dr. Haldane. To that company the book will mean something more than a mere recapitulation of his work or a history of the development and philosophic position, or a commentary on the action and reaction of abstract science on industrial research; it will mean something a little sacred, but something which one of them, at all events, finds some difficulty in putting into words.

JOSEPH BARCROFT.

Our Bookshelf.

An Introduction to Sedimentary Petrography: With special reference to loose Detrital Deposits and their Correlation by Petrographic Methods. By Henry B. Milner. Pp. 125. (London: T. Murby and Co., 1922.) 8s. 6d. net.

THIS attractive little book deals mainly with loose detrital deposits and their correlation by petrographic methods. The first chapter gives an account of sampling, treatment, and methods of examination in about a dozen pages. The next chapter (56 pages) deals with detrital minerals and is illustrated by numerous plates showing the shapes and appearances of loose grains and crystals. Following this are two chapters in which a courageous effort is made to show the value of the evidence provided by detrital minerals as a means of stratigraphical correlation, and as an aid in palæogeographical studies. A useful bibliography, a table showing the distribution of detrital minerals in British strata, and an index are included.

It is not easy to share Mr. Milner's confidence in the inferences he draws from the evidence provided by the mineral composition of sediments. Such evidence is rather unsafe as a basis of stratigraphical correlation, owing to the rarity and local significance of instances in which detrital minerals are derived from what he calls "homogeneous distributive provinces." The difficulty of generalising safely on the genesis of detritus is illustrated very forcefully by Mr. Milner's statement that a garnet-staurolite-kyanite suite suggests derivation from a definite thermo-metamorphic province, while a sphene-apatite-zircon assemblage is indicative of acid or intermediate rock-types as sources of supply, whereas an ilmenite-anatase-rutile-brookite association points to derivation from basic or ultrabasic rock-types.

These are, to say the least, highly controversial statements, but they tend to make the subject interesting and to stimulate further work; for, as Mr. Milner very properly remarks, the aim of science should be not merely to collect facts, but to explain them, and to put them to service in the solution of larger problems. The difficulty in this particular case is that the facts available are as yet scanty and very local in their significance. Much patient fact-collecting remains to be done before it can be ascertained whether any given system or series has definite characteristics as regards the nature and mineral composition of its detritus, and what those characteristics are. Not until this work has been done will it be safe to assert that the evidence provided by detrital minerals is useful in any substantial way as a basis of stratigraphical correlation.

T. C.

Universal Problems. By H. Jamyn Brooks. Pp. 123. (Braintree, Essex: The Author, The Limes, Shalford, 1922.)

REVIEW by quotation is not usually desirable, but with books of the class to which Mr. Brooks's belongs it is the only possible method. It will suffice to quote at random three of the eight "hypotheses on which the theories discussed in the work are founded."

"1. Every element, whether it be chemical, physical or mental, is distributed in unbroken unity throughout universal space."

"5. The mode of progression of the physical forces through matter and space is by communicated combustion, as is illustrated by the ignition of a train of gunpowder."

"7. Energy is the force which becomes manifest through expansion and contraction."

At first we are inclined to be amused, but really such books are tragic, not comic. For Mr. Brooks lacks neither intelligence nor enthusiasm. He has read enormously, and he has actually printed with his own hands the little book in which his views are presented. If only that intelligence and enthusiasm had been combined with the desire and the capacity to study science seriously! If only he had given to a few elementary text-books and a short course of laboratory work the time and application he has given to encyclopædia articles and "popular" treatises! Faced with such results as this, we are forced to ask ourselves whether the "popularisation" of science is all or mainly gain. Has Prof. Eddington, for example,—his book is quoted more frequently than any other—done good to science by arousing the interest of untrained readers, or harm by encouraging the delusion that they can really understand? N. R. C.

Mechanical Testing: A Treatise in Two Volumes. By R. G. Batson and J. H. Hyde. (Directly-Useful Technical Series.) Vol. 1: *Testing of Materials of Construction.* Pp. xiii+413. (London: Chapman and Hall, Ltd., 1922.) 21s. net.

THE contents of this volume deal with the testing of materials of construction; the testing of apparatus, machines, and structures will be included in the second volume. The authors have had extensive experience in the National Physical Laboratory, and this is reflected in their book. A large number of engineers in this country are now alive to the importance of continually testing the materials they employ, and to such the volume will be welcome on account of the information it contains regarding modern methods of testing. The student will also find the book useful, since no college laboratory contains all the apparatus described, and text-books on materials usually have only brief sections on the apparatus employed in testing. The greater part of the volume is devoted to the testing of metals; besides the ordinary simple commercial tests, we find chapters on the repetition of stress, combined stresses, hardness testing, impact testing, and the effects of temperature. The book closes with chapters on the tests of timber, stone, brick, concrete, road materials, limes, and cements. Sufficient information is given regarding the results of methods of testing to enable the experimenter to compare his own results with average values for trustworthy materials.