

down, to and fro, right and left. Suddenly the man in the street finds himself floundering in a morass of sceptical ignorance.

How much good it would have done him if it had been impressed upon him early enough that geometry "is a matter of experiment and of experience," that it "shows what would be true if certain other things were true," if he had realised that Euclid was a guide in the interpretation of ordinary space experience, and not a royal promulgator of irrevocable decrees! He would have been spared some of the journalistic sensationalism of the past two years, and have been better equipped to think clearly and without prejudice.

Of course the fourth dimension of relativity is not the same as that suggested by the older conception of four-dimensions, although it is still a common experience to hear somebody complain that it is nonsense to suggest that time is  $\sqrt{-1}$  times a length. Nevertheless this book of essays will be read with interest. The book was worth publishing if only for the clear and excellent introduction by Prof. Manning.

Some of the essays are distinctly good, although they all suffer the inevitable consequence of having a lot of information crammed into a small space. Several are impartial, others seem to look with favour on the possibility of a fourth dimension, while a few speak of it with scant respect. There is very much repetition, as is bound to be the case in such a publication, and a considerable amount of the sort of speculation that finds indications of the fourth dimension in spiritualistic phenomena, that makes the fourth dimension a constituent of life-force, that sees the fourth dimension suggested in Ephesians iii. 18, and that thinks it possible that many of the small objects each of us loses disappear by rolling out of three-dimensional space into the fourth dimension! S. BRODETSKY.

### Our Bookshelf.

*Imperial Institute: Monographs on Mineral Resources with Special Reference to the British Empire: Petroleum.* Prepared jointly with H.M. Petroleum Department with the co-operation of Dr. H. B. Cronshaw. Pp. x+110. (London: John Murray, 1921.) 5s. net.

A NEW "red" book dealing with petroleum has appeared recently as a small volume uniform with the well-known monographs of the Imperial Institute. It is a type of publication that was much needed, since it embodies in summary form the main geographical, geological and economic features of the world's oil-fields. At the present time this information is very scattered, more particularly in connection with British resources, so that a scientific discussion of the subject, at once lucid and easily accessible, forms a welcome addition to official technical literature.

The volume is divided into three sections, the first

reviewing briefly the more theoretical phases of oil technology, such as the origin, migration, and accumulation of petroleum, the second dealing with British, Colonial, and mandatory resources, and the third with foreign resources. Several statistical tables concerning production of oil in various countries are included, the information under this heading being brought up to 1920 in most cases; the results of distillation of typical crude oils are given, together with certain physical characteristics. A small map of the world showing the principal oil-bearing localities and a short bibliography are appended.

A somewhat unfortunate attempt has been made to tabulate the characteristics of the oil regions of the United States, a task requiring no little care and a great deal more space than has been allocated to it; one would scarcely describe the prevalent structure of the Appalachian region as anticlinal, while the omissions in the same connection under the headings of Lima-Indiana and the Rocky Mountains are difficult to understand. With this exception, the text is remarkably good in every way. H. B. MILNER.

*Peoples of All Nations.* Edited by J. A. Hammerton. No. 1. Pp. xxiv+112. (London: The Amalgamated Press, Ltd., 1922.) 1s. 3d. net.

THIS is the first instalment of a popular work to be issued in fortnightly parts which, when complete, will give an account of all the nations of the world in alphabetical order. It is a remarkable piece of journalistic enterprise. The whole work promises to be of great interest and of some considerable educational value as a work of reference for the class of reader for whom it is intended. In the present number Sir Arthur Keith contributes a foreword on the "Dawn of National Life," which deals with racial origins and the development of culture. The nations described are Abyssinia, Afghanistan, written partly by Sir Thomas Holdich, Albania, in part by Miss Durham, and Algeria. Each article is divided into three parts, of which the first deals with geography and ethnology, the second is historical, each of these being by a recognised authority, and the third gives statistical and other data. In view of the limited amount of space available, the articles are extremely well done and give the salient facts in readable and attractive form. The chief feature of the publication, however, is the illustrations, which are remarkable both in number and quality.

*Tables, Factors and Formulas for Computing Respiratory Exchange and Biological Transformations of Energy.* By T. M. Carpenter. (Publication No. 303.) (Washington: Carnegie Institution.) 2 dollars.

PUBLICATION No. 303 of the Carnegie Institution contains not only a number of tables for the expression of the results of gas analyses but also those of Benedict and his colleagues and of Aub and Du Bois for the estimation of basal metabolism. Some of these tables are inaccessible and all are scattered through a variety of journals and monographs, so it is a great convenience to the investigator to have the whole series in a single handy volume. This work will take its place beside "Chambers," "Barlow," and "Tables for Statisticians and Biometricians," on the shelves of most workers.