

illustrated outline of the principal discoveries and concepts in atomic and nuclear physics, and of their application to electrical power generation. The first three chapters carry the reader from Neanderthal man to Calder Hall in a series of leaps from peak to peak in the curve of discovery over the period. Chapter 4 summarizes the leading features of the principal power-producing fission reactors in use or under development in Britain and the United States. In Chapter 5 some of the applications of radioisotopes are described. Finally, Chapter 6, one of the best in the book, is devoted to the work on controlled thermonuclear reactions, with a comment on the possibility that such reactions can be utilized to generate electrical power in the future.

In the course of the lectures Dr. Allibone tried to reproduce most of the crucial experiments in atomic physics over the past sixty years. These demonstrations must have fascinated his young audience. A hint of the fascination, and of the care with which the demonstrations were prepared, is given by the brief descriptions of the special experiments devised to illustrate principles, for example, the experiments to show the Doppler effect and the pinch effect in parallel conductors carrying a large current. The illustrations are clear and helpful and some are unusually vivid in the impression they give of classic experiments—the diagram of Mosely's apparatus is an example.

In one or two places one would have liked a little more detailed or exact description. The account of neutron slowing-down on p. 43, for example, leaves the reader uncertain as to why the neutron's speed is reduced. On p. 61 control of a reactor is described so briefly as to leave the impression that power output is varied simply by pulling control rods in or out and leaving them so. But these are minor defects in a book that should interest laymen of all ages and be of considerable use to teachers.

It is pleasant to see the cautionary tale of Frederick Worms (whose parents were not on speaking terms) preserved between hard covers.

K. E. B. JAY

## THE WRITING OF AFRICAN GEOGRAPHY

### The Republic of the Sudan

A Regional Geography. By K. M. Barbour. Pp. 292+42 plates. (London: University of London Press, Ltd., 1961.) 42s. net.

### Africa

A Social Geography. By Anthony Sillery. Pp. xii+244+101 plates. (London: Gerald Duckworth and Co., Ltd., 1961.) 35s. net.

**S**Ocial anthropologists often produce large volumes concerned with individual tribes, sometimes with single villages. Geographers perhaps have a different purpose, certainly a broader sweep: but if they study in sufficient detail and write at sufficient length they should manage to avoid those generalizations which the alert traveller or astute politician so often makes. Prof. Barbour, at one time a lecturer in what has become the University of Khartoum, and now head of the Department of Geography in University College, Ibadan, shows in his book on

Sudan how this may be done. He has drawn extensively on his own field-work to bring out the significant regional variations in a country that, with an area of nearly a million square miles, is the largest independent State in the African continent.

This book is not a handbook of a vast territory, but it does provide a most useful introduction to it. A little less than half the book deals with Sudan as a whole, in terms of its physical and social geography and of its particular concern for the control and use of the Nile waters. There then follow chapters describing the six regions recognized by the author, who emphasizes for each its special characteristics and peculiar problems. Finally, there is an analysis of the factors contributing to the growth of a modern State in Sudan, and a conclusion that looks, with tantalizing brevity, at 'the way ahead', with the author's comment—applicable to so many countries besides Sudan to-day—that "the white man set in motion revolutionary changes in Africa, but responsibility for the future lies in the hands of the Africans themselves".

When more countries have volumes like this one on the Sudan and that on Nigeria in the same series by K. M. Buchanan and J. C. Pugh, or atlases such as those of Kenya or Tanganyika, both the white man and the African will be helped towards a deeper and more realistic understanding of the continent's present problems and future prospects.

Mr. Sillery, who was for many years a member of the Colonial Service and has latterly made some studies in African history, has tried to provide such understanding for the general reader who, in his own words, wants "some idea of Africa and of the people who live in it". It is a mine of up-to-date information about various parts of the continent, ranging from relief and climate to ethnology, agriculture, population, race relations and politics; it is written most readably and is very adequately illustrated by more than a hundred well-produced and usefully captioned photographs. Why the publishers and the author should call all this "social geography" is never made clear. Much, it is true, is basic material for the geographer (and many other students), but only rarely is it analysed geographically. It is significant, for example, that the book has only three maps, one of which shows relief by the "caterpillar method" associated with the map-making of more than a century ago. Furthermore, much of Mr. Sillery's information goes far beyond the limits suggested by the adjective "social". The titling of the book is indeed most unfortunate. Most geographers will almost certainly agree with my comment: other readers may understandably fight shy of a useful general work that has "geography" in its title. I may, of course, be wrong and the publishers right: they have had experience in this respect, since some years ago they produced a volume on the Far East with a similar title, also by an author who is not a geographer, and this book has recently gone into a third edition. It would be satisfying, however (certainly to geographers), if the world at large would accept that geography is no longer what it was once thought to be—capes and bays, products and tribes, and a general mass of miscellaneous and often unrelated information—and that real integrated geography of the kind generally taught to-day is most effectively written by trained geographers. Prof. Barbour's book is good evidence of what can be done if geographers are given the chance to travel, to observe and to analyse.

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