

Techniques in Blood Grouping

By Ivor Dunsford and C. Christopher Bowley. Pp. xiv+250+6 plates. (Edinburgh and London: Oliver and Boyd, Ltd., 1955.) 21s. net.

THE leading position which Britain now holds in the theoretical investigation of blood groups, and in the practical application of the results to blood transfusion, can be traced to many causes; but on the personal side a large share of credit must be given to the late Dr. G. L. Taylor for the meticulous serological techniques upon which he insisted and which, albeit with many small modifications and improvements, form the main basis of the methods used in Britain to-day. Much of the burden of maintaining high serological standards is borne by the laboratories of the National Blood Transfusion Service, and prominent among these is that of Sheffield, the director and senior scientific officer of which have laid serologists and transfusion officers further under their debt by writing a detailed description of the methods used by them.

After a preface by Dr. R. R. Race and an introduction by the authors, the book begins with a section of 86 pages on general principles. Here we are given as much of blood group theory as is necessary for the intelligent performance of grouping tests of all kinds, but the section has an essentially practical bias. Much useful information is also given about the organization and running of a transfusion service. The second section, of 146 pages, describes in full detail eighty techniques used in the Sheffield laboratory, from the oldest and simplest to the most up-to-date and elaborate. It is almost impossible to learn blood grouping entirely from a book, but there can scarcely be another book which can so fully supplement the minimum necessary amount of basic training. The methods described are essentially those used throughout Britain and by many workers overseas who have been taught in Britain, but they are, so far as detail is concerned, the methods of one laboratory. There is not, for example, any insistence on the very small serum volumes of about 0.01 ml. per test now used as a routine in many laboratories. A final section of the book is a useful glossary of about six hundred terms.

It would be easy to criticize the literary style, but the language is seldom ambiguous. The book can be strongly recommended to all practical blood group workers.

A. E. MOURANT

Iron Ores of India

By Dr. M. S. Krishnan. Pp. vii+175+6 plates. (Calcutta: Indian Association for the Cultivation of Science, 1955.) Rs. 5; 1.50 dollars; 10s. 6d.

THIS interesting little book is based on three lectures delivered in 1953 by the Director of the Geological Survey of India in his capacity as Ripon professor of the Indian Association for the Cultivation of Science, the subjects being: (1) ancient Indian iron; (2) Indian deposits of iron-ores; (3) the modern iron and steel industry in India. In the book brief introductory sections have been added, dealing with the geochemistry of iron, its ores and their modes of origin. Dr. M. S. Krishnan has obviously been fascinated by the history of iron and steel-making in prehistoric and ancient times, and many readers will find this part of his book of special interest. Iron is known to have been used in Egypt about 8,000 years ago. In India it has been worked

at least since Vedic times, say for about 3,800 years. The author describes remarkable examples of non-rusting iron which have been discovered in various parts of the country, ranging from the prehistoric implements and weapons of Madras to the celebrated Delhi Pillar. The latter consists of skilfully welded iron which is practically pure; it bears several inscriptions, all of which have successfully withstood exposure to weathering, and in the case of the oldest for well over 1,500 years. Although the crude smelting process then in use entailed enormous waste of ore, fuel and time, the resulting iron was pronounced by Sir Robert Hadfield to be of superior quality to anything of the kind that could be produced commercially in 1925.

Other readers will appreciate the short but well-documented account of the geology of Indian iron ores and their varied modes of origin. A good summary is given of the many early attempts to begin a modern industry, starting from about 1774. As a result of various adverse circumstances, most of these enterprises were unable to compete successfully and their sole survivor in 1889 was the Bengal Iron Works. Since then, however, very considerable progress has been made, the significant details of which in the various districts concerned are fully recorded. The Tata Iron and Steel Co. was registered in 1907, and in 1952 it produced about two-thirds of India's steel output of 1.2 million tons for that year. This rate of production is now being rapidly increased and, as India is generously endowed with large reserves of iron ore and of the chief raw materials for smelting, there are good grounds for the current expectation that within the next quarter of a century steel production in India will expand to between 15 and 20 million tons per annum.

ARTHUR HOLMES

Hurricanes

Their Nature and History, particularly those of the West Indies and the Southern Coasts of the United States. By Ivan Ray Tannehill. Ninth, revised edition. Pp. x+308. (Princeton, N.J.: Princeton University Press; London: Oxford University Press, 1956.) 36s. net.

THE ninth edition of this well-known book, revised and extended to bring the chronological data complete up to October 1955, gives an excellent account of the phenomena of cyclones, their nature and the paths they follow. It would be a vain effort to try to summarize a book so full of well-authenticated facts. Rather would the present reviewer recommend anyone who is interested in tropical cyclones to read the book from cover to cover.

Mr. I. R. Tannehill has spent twenty years in the United States Weather Bureau on hurricane warning work, and his familiarity with all aspects of the behaviour of hurricanes is made evident on every page of this book. The charts of paths followed by hurricanes are by far the most complete available in any book, while the description of damage done by individual hurricanes gives a vivid picture of the tremendous store of energy which they possess.

This is a book to have on one's bookshelves and one that should be read and re-read. The present reviewer found it fascinating from beginning to end. It has been produced in a manner fully worthy of the Princeton University Press.

D. BRUNT