A History of Science, Technology and Philosophy in the 16th and 17th Centuries

By Prof. A. Wolf, with the co-operation of Prof. F. Dannemann and A. Armitage. (History of Science Library.) New edition, prepared by Dr. Douglas McKie. Pp. xxvii+692+68 plates. (London : George Allen and Unwin, Ltd., 1950.) 42s. net.

WHEN Prof. A. Wolf's book appeared in 1935, it was warmly welcomed and praised as an important addition to scientific literature. Since then it has become an indispensable text-book and source of information on the progress of science in the sixteenth and seventeenth centuries, valuable alike to men of science themselves and to others more generally interested in the growth and development of natural philosophy.

It may be suspected that those who are actively engaged in research and experiment do not always realize how much they owe to the scientific history they have themselves absorbed in the course of their work, and tend to underrate the value of historical studies. In recent years this tendency has been corrected ; the history of science and technology has been cultivated as an almost virgin field, and there has been a growing appreciation of the importance of the historical approach to science, particularly to those who wish to obtain a better understanding of its possibilities and its limitations. One indication of this change is, for example, the formation, a few years ago, of the British Society for the History of Science ; and that there has been such a change is in no small measure due to the publication of works of scholarship such as this.

It needs no telling that Prof. Wolf's book deserves the praises which have been bestowed on it, and this new edition is very acceptable. It has been prepared by Dr. Douglas McKie, who has corrected a number of errors in the text and extended the bibliographies at the ends of the chapters.

Arithmetical Questions on Algebraic Varieties

By Prof. Beniamino Segre. Pp. vii+55. (London : Athlone Press, University of London, 1951.) 10s. 6d. net.

PROF. B. SEGRE, of the University of Rome, is the chief pioneer in the application of the concepts and methods of classical algebraic geometry to problems in the theory of numbers. His publications on this subject, started in 1934 and still continuing, have been an inspiration to many other research workers. In 1950 the Senate of the University of London invited him to give three lectures at King's College, and these lectures, supplemented by an ample bibliography, have now been published by the newly established Athlone Press of the University.

The first lecture deals with the geometry of quadratic forms in an arbitrary field, and starts by recalling some results given in the author's "Lezioni di geometria moderna" (Bologna, 1948). These are considerably developed, at least in outline, with references for a complete treatment of the theorems given without proof. The second lecture deals with algebraic geometry and Diophantine analysis, and shows how projective and birational geometry may be used in various branches of the theory of numbers. The third lecture, entitled "Problems concerning rationality and the theory of the base", may be considered as an extension of the subjects dealt with in the second lecture.

It is stated that the purpose of the book is to offer an exposition which will be of value not only to research workers but also to a more general range of mathematicians. There is no doubt of the value to research workers, but a few more pages of introductory explanation would have made the book more intelligible to those mathematicians who are unfortunate enough to lack a previous acquaintance with the subject. H. T. H. PIAGGIO

Finite Matrices

By Dr. W. L. Ferrar. Pp. vii+182. (Oxford : Clarendon Press ; London : Oxford University Press, 1951.) 17s. 6d. net.

WITH the exception of Chapter 5 and most of Chapter 8, this book covers well-worn ground, but is well and clearly written. In Chapter 5, Dr. W. L. Ferrar considers infinite series of finite matrices and functions of finite matrices. The initial ideas can be extended to infinite matrices[1] ; but, of course, more restrictions are then required. Some interesting new results are given by Dr. Ferrar in this chapter.

In Chapter 8, notes are given on the resolvent of a finite matrix, on positive-definite quadratic forms subject to linear conditions, and on sets of anti-commutative matrices. The remaining chapters give an easily readable account of introductory matter, equivalent matrices, equivalent λ-matrices, collineation, congruence and matrix equations. The book is in every way suitable for the class of readers which the author has in mind, as expressed in the preface — namely, graduate students and undergraduates whose degree courses involve more matrix theory than a text-book of elementary properties will provide.

There is a great need for text-books of this standard in several other branches of mathematics.

R. C. COOKE

[1] See Cooke, R. G., "Infinite Matrices and Sequence Spaces", 27, 30, 14, 38 (Ex. 18, (ii)), etc. (Macmillan, 1950).

Man on his Nature

By Sir Charles Sherrington. (The Gifford Lectures, Edinburgh, 1937–8.) Second edition. Pp. viii+ 300+8 plates. (Cambridge : At the University Press, 1951.) 30s. net.

SIR CHARLES SHERRINGTON'S Gifford Lectures at the University of Edinburgh, in which he put forward the philosophy of a physiologist, are now too well known to require any summary. They have been twice reprinted, and in this new edition have been substantially revised. It is gratifying that the author has been able to do this work, and his method of doing it is much to be recommended. Many writers revise by adding on extras, lengthening the book and loosening the argument. Sir Charles's method is the reverse ; he has cut down the length by about a quarter and tautened up the argument.

In recent years there have been a number of pronouncements by men of some scientific repute about the nature of man and of the universe in general. These have been made very much ex cathedra, in an irresponsible, even hysterical, fashion ; but have been accepted with enthusiasm by the more impressionable of the public, to the dismay of others who care for the good name of science. We have in this book an invaluable counterpoise. In technical scientific matters Sir Charles has never confused loose speculation with established knowledge. Speaking on philosophical matters, he is one who weighs his words, and is eminently sane, cautious and responsible. He does not claim to possess the key to unlock all doors, and for that very reason speaks with great authority. A. D. RITCHIE