

History of American Technology

By Prof. John W. Oliver. Pp. viii+676. (New York: The Ronald Press Company, 1956.) 6.50 dollars.

IN writing what claims to be the first comprehensive historical account of American technology and invention, Prof. Oliver undertook a work of encyclopaedic scope. It covers the whole range of American science and technology and their effect on the growth of American culture at large, and it is not surprising that it should be somewhat uneven in merit. On the whole, the first two parts are the best—those in which Prof. Oliver reviews “Yankee Ingenuity, from Jamestown and Plymouth to the American Revolution” and “Laying the Foundation, from the American Revolution to the Civil War”. In the third part, in which he treats of the “Rise of the United States as a World Power, from the Civil War to 1900”, the difficulty of maintaining uniformity of accuracy and treatment in detail becomes apparent, and it is even more so in the fourth part, on “World Leadership: from 1900 to the Present”.

The blemishes, however, are minor and of detail, and such as should have been eliminated had Prof. Oliver shown his manuscript to a competent specialist. Any well-informed chemist would have been able to correct the confusion between pigments and vat dyestuffs, between antipyrites and antipyrin, or the statement about the preparation of nitric acid and ammonia from coal tar. Any rubber technologist would have helped him to get his reference to rubber a little tighter and more accurate, a textile technologist could have assisted in getting his treatment of man-made fibres in better balance, while in his account of the age of plastics Prof. Oliver is again not very happy and might well have been helped to reshape misleading sentences.

None the less, Prof. Oliver has written a notable and readable book. He never fails to see the wood for the trees, and he can depict succinctly and luminously the contribution of science to a particular technology. Nor does he overlook the way in which science and technology are communicated; some of his most valuable chapters touch on the growth of scientific and technical societies and means of publication. It is a factual account and not the philosophical study that Mumford essayed on an even larger canvas, and for that reason it is a pity that the bibliographical notes to the chapters should vary so widely in adequacy. R. BRIGHTMAN

The Protozoa, Sarcodina

By Dr. Margaret W. Jepps. Pp. vii+183. (Edinburgh and London: Oliver and Boyd, Ltd., 1956.) 30s. net.

PRIOR to the publication of this book, students requiring information on rhizopods have had to refer to the comprehensive volumes of the “*Traité de Zoologie*” and Reichenow’s recent revision of Doflein’s “*Lehrbuch der Protozoenkunde*”. Dr. Jepps’s book is based on a series of lectures given to senior students of zoology and provides a general survey suited to their needs. The didactic approach commonly found in such books is avoided and gaps in the knowledge of the morphology, biology and classification of rhizopods are indicated. The introductory chapter gives a brief review of protozoan morphology and physiology and is followed by a detailed account of the class Sarcodina. As the author herself admits, the systematics of these organisms are not settled

and she adopts a classification into seven orders, Amœbæa, Foraminifera, Heliozoa, Radiolaria, Rhizomastigina, Protomyxidia and Mycetozoa. The morphology and life-history of representative organisms in each order are fully described and illustrated, followed by a brief account of the taxonomic classification in those orders where this has been worked out. Ecological aspects of each group are not neglected; thus a detailed account is given of parasitic species in Amœbæa and Mycetozoa, including the host-parasite relationship. Attention should be directed to an ambiguous footnote (p. 87) which states that “the originals [of the illustrations of Brady’s book on Foraminifera] are preserved in the British Museum (Natural History)”. This refers, of course, to the original foraminiferan shells.

The book is supplemented by an extensive bibliography. Reference is made to recent publications from which it is possible to trace the original literature. The text is well illustrated by line drawings, though it is unfortunate that the standard of reproduction is uneven. Although addressed to senior students, it will also prove useful to those workers requiring a general survey of the Sarcodina.

R. A. NEAL

The Physics of Nuclear Reactors

A Conference arranged by the Institute of Physics in London from 3 to 6 July, 1956. (*British Journal of Applied Physics*, Supplement No. 5.) Pp. iv+112+xvi. (London: Institute of Physics, 1956.) 25s.

THE British Nuclear Energy Conference set up by the four professional engineering institutions and the Institute of Physics has undertaken the task of disseminating among its members information on the developments in the nuclear energy field. In pursuance of this policy, symposia on the engineering aspects of reactor technology have now been followed by the Symposium on the Physics of Nuclear Reactors organized by the Institute of Physics. The proceedings of this symposium appear as a *Supplement* to the *British Journal of Applied Physics*.

In the opening address, Sir John Cockcroft surveys the scientific problems in the development of nuclear power. These range from the accurate determination of nuclear parameters vital for the design of reactors with optimum fuel utilization, to the chemical and metallurgical problems of material compatibility. J. R. Dietrich, Argonne National Laboratory, United States, gives a paper on the physics of advanced reactors containing interesting new information on the experimental boiling water reactor (EBWR) and the fast breeder reactor (ZPR. III). Two other papers on reactor physics by P. W. Mummery and L. R. Shepherd follow; the former on experimental reactor physics stresses the continued importance of integral measurements with the present lack of accurate nuclear data, the latter describes the zero energy fast breeder reactor, Zephyr. The value of a reactor as a research tool in solid state physics is brought out by A. H. Cottrell and the contributors to the discussion of his paper on the irradiation effects on the physical properties of materials. The ancillary problems of reactors, such as shielding, control and instrumentation, are covered by papers by E. C. Laurence, A. J. Salmon and W. Macrae. The concluding papers are devoted to surveys of the role of chemistry and metallurgy in a nuclear energy project by R. Spence and L. Rotherham, and to discussion of the design of research reactors opened by W. B. Lewis and F. W. Fenning. W. K. MANSFIELD