

man, soil microbiology is treated under three main divisions, the first two dealing with the occurrence, isolation, identification, and cultivation of soil organisms, and the third where their chemical activities are discussed. Throughout, the treatment is very complete, and in this perhaps lies one of the faults of the book; for without a wide knowledge of the subject there is a danger of not seeing the wood for the trees. Also, the author would have been well advised to show more critical judgment in discussing the work of others: as the book stands, students will have difficulty in differentiating the really good pieces of research from the mediocre or even bad. Apart, however, from these blemishes, Waksman has done good service to soil microbiology in producing so compendious a volume, the citation of more than 2500 references being a service in itself. His book is essential to all those interested in the micro-organisms of the soil.

*Money and Monetary Policy in Early Times.* By A. R. Burns. (The History of Civilisation Series.) Pp. xiii + 517 + 16 plates. (London: Kegan Paul and Co., Ltd.; New York: Alfred A. Knopf, 1927.) 25s. net.

IN a conclusion which sums up the lines of argument of his valuable study of money as an element in the growth of early civilisation, Mr. Burns enumerates the deficiencies in the evidence, for, as he says, it is as well to keep in mind the things we do not know, as well as those we do. This is wise, for the gaps in our evidence are great and the theories of numismatists and archæologists have not always been marked by restraint. For example, throughout the whole period with which the author deals, there is no evidence of the legal weight of coins, nor is it known what were the practical conditions of monetary law and the circulation of currency. How did the State decide what was the quantity of coins to be circulated? This is a point of peculiar importance for Mr. Burns's study, of which the originality lies particularly in his investigation of the use of monetary issues in relation to political supremacy. As a result he shows how, broadly, a distinction can be drawn between the policy of the great eastern empires and that of the Greek States.

In regard to the early stages of a currency, Mr. Burns shows himself sceptical as to the existence of a primitive state of exchange which is unorganised barter. This he regards as only a logical postulate for purposes of exposition. Nor does he think that the ox, though the first unit of value, recognised over a wide area, was ever in general use as a means of exchange. The author is to be congratulated on a sound piece of work which cannot fail to stimulate further research.

*The Working of Aluminium.* By Edgar T. Painton. Pp. ix + 214 + 20 plates. (London: Chapman and Hall, Ltd., 1927.) 13s. 6d. net.

THE scope of this book is not exactly indicated by its title, as the making of alloys and of castings is included as well as the mechanical working, heat

treatment, welding, finishing, and testing of aluminium and the light alloys. On all these matters the author is informative, and his account of them shows practical familiarity with the workshop. Aluminium presents difficulties in machining and finishing to those who are accustomed to other metals, and many useful hints may be gathered from the instructions here given, and from the descriptions of actual operations, mainly in connexion with the motor industry. Theoretical discussions are deliberately excluded, and there are no photomicrographs, but the brief notes on age-hardening and on the 'modification' of the alloys of aluminium and silicon are accurate so far as they go.

In the account of heat treatment and melting, some mention might have been made of electric furnaces, which are now so widely used for these purposes in America, but are also used in Great Britain, and in the chapter on testing reference might have been made to the use of diamond pyramid indentation instruments, which are already displacing the scleroscope in some laboratories, on account of their greater accuracy when used with thin sheets. Among processes for the protection of aluminium surfaces, the excellent method of anodic oxidation, is described, with its further development, the application of dyes to the oxidised surface. Electroplating with cadmium is mentioned, but not the now extensively used process of plating with zinc. The illustrations are numerous and good, but the publishers have used an excessively loaded paper, which makes the book inconveniently heavy and throws an undue strain on the binding.

*Ergebnisse der Biologie.* Herausgegeben von K. v. Frisch, R. Goldschmidt, W. Ruhland und H. Winterstein. Zweiter Band. Pp. vi + 729. (Berlin: Julius Springer, 1927.) 56 gold marks.

THE price of this, a volume of essays by specialists, is too much. £2:16s. for a book, which from an English publisher would cost £1, or at most £1:10s., is not justifiable. Recently two correspondents in NATURE directed attention to the cost of other Julius Springer publications, and we cannot advise the reader to purchase this volume at the price asked for it by the publisher.

The volume contains three essays on tropisms in plants—by P. Stark, L. Brauner, and W. Zimmermann. So far as the reviewer is able to judge, these sections are comprehensive, and they all have extensive bibliographies. There is then a chapter on urea, which the reviewer has been informed is good. This is written by A. Kiesel, of Moscow. In the section following, F. von Wettstein discusses heteroploidy at length. The Golgi apparatus is the subject of another chapter by W. Jacobs. This part is quite good and comprehensive.

Following this is a biochemical chapter on striated muscle fibre, by Bierdermann. This will be found useful to physiologists interested in muscle contraction, etc. An article on the spleen, by E. v. Skramlik, is followed by a section by Richard Goldschmidt on intersexuality, etc. This, as one might expect, is a valuable and interesting review of the subject.

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