

detailed classified description of all minerals likely to be met with in soils. Finally, there is a systematic scheme for the detection and identification of the commoner of such minerals, and a bibliography of 136 references. This book and its subject merit the attention of all soil investigators.

H. J. P.

*Webbia: Raccoltà di scritti botanici.* Edita da Prof. U. Martelli. Vol. Quinto, Parte 1<sup>a</sup>. Pp. 355 + xiii plates + maps. (Firenze: Mariano Ricci, 1921.)

THE portrait of Odoardo Beccari which serves as frontispiece to the most recent instalment of "Webbia" reminds men of science that the death of that eminent traveller and botanist at the age of 77, on October 20, 1920, meant the loss of the chief authority on the natural history of Palms. Much of this part (pp. 5-198) is devoted to two important articles left complete when Beccari died. A "Review of the Old World *Coryphaea*" is an epitome of the monograph prepared by Beccari for the Annals of the Royal Botanic Garden, Calcutta, in continuation of those on "Asiatic Palms" published in 1908 and 1911. An account of "The Palms of New Caledonia" is of exceptional interest because the palms of this group of islands, though few in number, are all endemic species.

In "La Culla del Cocco" (pp. 201-294) Prof. E. Chiovenda reviews the evidence available as to the home of the coco-nut. Historical and ethnological considerations may be adduced in favour of either the Asiatic origin accepted by P. Miller (1752), R. Brown (1818), and A. R. Wallace (1853), or the American origin suggested by von Martius (1840), considered at first by A. de Candolle (1855) to be probable, and regarded by B. Seemann (1873) as assured. The taxonomic judgment of von Martius turned the scale in favour of America until Beccari (1877) showed that this judgment was contrary to morphological facts. These facts, indeed, contraindicate an American origin so that Beccari suggested instead a Polynesian one, while A. de Candolle (1883), writing now "with more information and greater experience," favoured a Malayan rather than an American origin. The renewed advocacy of an American origin by Dr. O. T. Cook (1900 and 1910) left Beccari (1916) indisposed to modify his earlier view. Careful consideration of all the evidence leads Chiovenda to agree with A. de Candolle's later belief.

"Webbia" since its inception has contained many important results of Beccari's botanical studies, and the editor, Prof. U. Martelli, fittingly concludes this part with a sympathetic "Memoir" (pp. 295-343) of that eminent man of science, to which is appended an invaluable bibliography (pp. 344-353) of Beccari's contributions to botanical literature.

*The Journal of the Institute of Metals.* No. 2, 1921. Vol. xxvi. Edited by G. Shaw Scott. Pp. x + 760 + pl. xxxiv. (London: Institute of Metals, 1921.) 31s. 6d. net.

THE growth in size of the half-yearly volumes of the Journal of the Institute of Metals is a striking indication of the increasing attention that is given in this country to the study of the non-ferrous metals. The lecture on the casting of metals by Prof. Turner, which occupies the first place in the present volume, directs attention to the comparative neglect of this important

subject of casting by scientific workers, in spite of the high degree of practical skill that has been acquired by foundrymen, proceeding by a method of trial and error. The remaining papers deal with varied questions. A note on the characteristic defect which appears in some bars of extruded brass led to an interesting discussion at the meeting of the Institute, in the course of which laboratory experiments with wax models were cited in illustration of the mode of flow during extrusion. A second note on the casting of brass ingots shows the desirability of an exchange of information between ferrous and non-ferrous metallurgists, the device proposed having been long adopted in steel works. Other subjects treated are gun-metal, cold-working, scleroscope hardness, nickel-aluminium-copper alloys, etching methods, and the properties of rolled zinc. An important research by Dr. Hanson and Miss Gayler definitely connects the ageing of duralumin and similar alloys with the varying solubility of magnesium silicide in aluminium. The number of abstracts shows an increase on previous years.

C. H. D.

- (1) *A Short Course in Commercial Arithmetic and Accounts.* By A. Risdon Palmer. (Mathematical Series for Schools and Colleges.) Pp. x + 171 + xv. (London: G. Bell and Sons, Ltd.) 2s. 6d.
- (2) *The Use of Graphs in Commerce and Industry.* By A. Risdon Palmer. (Handbooks of Commerce and Finance.) Pp. ix + 47. (London: G. Bell and Sons, Ltd.) 2s. net.

(1) MR. PALMER'S books on the application of elementary mathematics to commerce and industry are a welcome addition to the literature on the subject. His "Short Course" is a brief account of the most important arithmetical methods and processes required in commerce. Those who know Palmer and Stevenson's "Commercial Arithmetic and Accounts" will expect to find the new volume useful and interesting, and they will not be disappointed. There is a touch of real life about most of the chapters, especially that on "The Home Trade": one only misses the Public Receiver and the creditors' meeting. But are contracted methods really used in commercial life?

(2) Graphical representation is a useful and important process in industrial and commercial life; its vogue is increasing, and we have already had the case of a Cabinet Minister using a graph in the House of Commons to illustrate the activity of his department. While the methods are not exactly the same as those used in mathematics as such, the ideas are of course similar. One often wonders whether and how the ordinary newspaper reader understands the diagrams used in connection with price fluctuations or statistical reports. Mr. Palmer's little book will certainly be useful to all who have to deal with such pictorial information: it is indispensable to the business man and economist.

The book is the third of a series of handbooks of commerce and finance. Co-ordinates are explained and applied to the broken straight-line diagrams used by commercial and other journals, and the rectangle method and the sector method of representation used in books on geography, economics, and commerce are then discussed. There are a number of useful exercises.

S. BRODETSKY.