

*First Steps in Quantitative Analysis.* By J. C. Gregory. Pp. vi+136. (London: Edward Arnold, 1905.) Price 2s. 6d.

IN this little book the author has aimed at "providing a grounding in the fundamental principles of quantitative analysis. It includes the use of the fundamental volumetric solutions and several gravimetric estimations." Of the existence of a considerable class of students whose requirements would be satisfied by the scope of the work there can be little doubt, and a small laboratory manual dealing with a few typical gravimetric and volumetric processes cannot be regarded as superfluous. The author's choice of material leaves little to be desired, but exception may be taken to matters of detail. The percentage strength of a solution is defined as the number of grams of substance in one hundred cubic centimetres, a definition which is scarcely acceptable to the majority of chemists. The first alternative method described on p. 64 for the preparation of a normal sodium hydroxide solution may perhaps give results accurate to 1 per cent., but is scarcely consistent with the employment of a multiplying factor containing five significant figures. Such inconsistency in the use of significant figures is not infrequent, and detracts considerably from the value of the book. On p. 67 it is stated that "the specific gravity of strong hydrochloric acid is 1.16 and the liquid contains 31.79 per cent. by weight of hydrogen chloride"—the temperature is apparently of no consequence whatever. A brief consideration of the theoretical side of the methods and operations involved would have made the book considerably more useful as an introduction to quantitative analysis. H. M. D.

*Man: an Introduction to Anthropology.* By Dr. W. E. Rotzell. Second edition. Pp. 186. (Philadelphia: J. J. McVey, 1905.)

THE author of this book is a lecturer on botany and zoology in Philadelphia, but the systematic details he adopts are those of "Prof. Alexander Macalister, of the University of Dublin, and of the late Prof. H. Alleyne Nicholson, of the University of Toronto," so no one can accuse him of being up to date in his own subject. "Anthropology," he informs us, "seems to be, unfortunately, one of those subjects about which the vast majority of persons know very little," and with a zeal which far exceeds his knowledge he attempts to remedy this defect; but it is evident his information is second-hand, imperfectly comprehended, and ill-digested.

The following quotations will serve to substantiate this criticism:—"The North Mediterranean branch (of the White or European Race) comprises the Basques, the Aryans, and the Caucasian peoples." "The Indic group (of the Aryans) inhabit an extensive region of Southern Asia. At present there are many different tribes and castes inhabiting the great Indian peninsula, the forms of speech spoken by them presenting numerous diversities"; except for a word or two about Sanskrit and Buddhism, this is all that is given on the ethnology of India. In his final chapter, on the development of culture, Dr. Rotzell puts forward the view that the blazing of trees was the beginning of writing.

*Elementary Algebra.* By W. G. Borchardt. Pp. vii+492+lxiii. (London: Rivingtons, 1905.) Price 4s. 6d.

The arrangement of the subject adopted in this work differs from that adopted in many other works, simplicity and ease for the beginner being the chief object. The fundamental operations (addition, subtraction, multiplication) are illustrated graphically on squared paper, and the solution of simple equations

is given immediately afterwards, such subjects as fractions, highest common factor, and lowest common multiple being postponed; in fact, fractions are left until the beginner has acquired a considerable skill in the solution of equations. Great use is made of graphic illustration, and by means of it many difficulties are removed from the path of the beginner.

The plan of the book leaves nothing to be desired on the score of simplicity; it is about the most simple work that we have seen. The advanced part of the book may be said to begin with chapter xxxii., which treats of the theory of indeterminate equations. The general theory of quadratics follows, as well as the discussion of progressions, binomial and multinomial theorems, &c. Every branch is illustrated by a large collection of examples, with answers.

*Illustriertes Handbuch der Laubholzkunde.* Part iv. By C. K. Schneider. Pp. 449-592. (Jena: G. Fischer, 1905.) Price 4 marks.

A PORTION of the Rosaceæ is treated in this part, beginning with Spiræa, passing from the Spiræaceæ to the Rosaceæ and then to Prunus. Why the author distinguishes Spiræaceæ and Drupaceæ as orders is not obvious, but this causes no inconvenience to anyone using the book for practical purposes; and in this connection it should be stated that the analytical tables for running down the genera are made as concise as possible, and that cross references are inserted in the margin to facilitate the comparison of subdivisions.

The part includes three large genera, Spiræa, Rubus, and Rosa; while examining the Spiræas in the Boissier herbarium, Mr. Schneider came across several specimens, chiefly Asiatic, that he regards and has named as new species. In the case of Rubus, a selection has been made of European types and a number of foreign species that may be found suitable for introduction into Europe. Undoubtedly the most interesting portion is that devoted to the roses; the treatment follows very closely the arrangement given by Keller in Ascherson and Graebner's synopsis, but Keller's subsections are classed as sections, a system that is of practical convenience, although it tends to magnify the importance of the subsections. Amongst the changes noted, Schneider follows Keller in superseding *Rosa indica*, L., by *Rosa chinensis*, Jacq., and *Rosa damascena*, Mill, perhaps on account of its antiquity, is numbered as a species.

*Esquisse d'une Théorie biologique du Sommeil.* By Dr. Ed. Claparède. Extrait des *Archives de Psychologie*, T. iv. Pp. 114. (Genève: H. Kundig, 1905.) Price 3.50 francs.

IN this essay, the contents of which have appeared in certain journals, the author first examines the various theories which have been propounded to explain the occurrence of sleep, and having found these wanting proceeds to formulate a theory of his own.

The various theories of sleep are first classified and discussed, and the difficulties in accepting them stated. All the common theories regard sleep as a cessation of function in the organism, a negative or passive state or phase. The author, however, regards sleep as an active state, a defensive mechanism of the nature of a reflex action, an instinct which has for its object the precipitation of the organism into a condition of inertia whereby exhaustion is prevented. We therefore sleep, not because we are exhausted or asphyxiated or auto-intoxicated, but in order to ward off such effects, and many interesting facts are quoted in support of this hypothesis. The essay deals in a concise and interesting manner with the whole subject of sleep, and is well worthy of perusal.