

tion of facts. Too many sentences commence with "Suppose," or "It would not be surprising," or "It is just possible," or words with a like significance. If the author had put his views into an essay of ten or twelve pages, he would have done more to further his object, in which we cordially sympathise, of arriving "at the truth concerning the position of the Old Red in the succession."

*Steel and Iron for Advanced Students.* By Arthur H. Hiorns. Pp. xvi + 514. (London: Macmillan and Co., Ltd., 1903.) Price 10s. 6d.

EVIDENTLY based upon a course of lectures delivered at the Birmingham Municipal Technical School, this little book is primarily a text-book not of so highly advanced a character as the title might perhaps suggest. It is well up to date, and embodies the latest views on the subject expressed at recent meetings of the Iron and Steel Institute. The arrangement of the matter is very similar to that adopted in Bauerman's "Metallurgy of Iron" and in Greenwood's "Steel and Iron." The 131 illustrations are admirable, and well adapted to indicate to the student or intelligent workman the principles described. The index is the least satisfactory part of the book. The names of several authors cited (Brinell, Brustlein, Carvès, Chénot, Eyermann, Hoffmann, Lürmann, Massicks and Crooke, Mukai, McWilliam and Pourcel) are incorrectly spelt, whilst several authors to whom reference is made in the text (Berthier, Chernoff, Ewing, Faraday, Galbraith, Hautefeuille, and Wingham) are omitted. Similar errors in proper names occur in the text. Sir Lowthian Bell, for example, is described as Sir Lothian (p. 135) and as Mr. Bell (p. 380), and no distinction is made between Mr. Edward Riley and Mr. James Riley. Despite these faults, the book may be cordially recommended to science teachers as one which is eminently suitable for metallurgical classes.

*Agriculture for Beginners.* By C. W. Burkett, F. L. Stevens, and D. H. Hill. Pp. xii + 267. (Boston and London: Ginn and Co., 1903.)

THE question of the introduction of instruction in agriculture or any other definitely technical subject into our elementary schools is one which has been much debated recently, but the opinion of most of those who have any working knowledge of teaching is very strongly against it. Agriculture in schools is very likely to become a book subject; it is far preferable to take up some question like the growth of a plant, which admits both of simple experiment on the part of the pupil and of abundant illustration from practical life, which again supplies a basis of reasoning and knowledge for anyone who happens in later life to be concerned in the raising of crops.

The authors, however, of the little book under notice consider that in the country schools of the United States something more definitely agricultural is wanted, since "most boys and girls reared on a farm get no educational training except that given in the public schools." They have, accordingly, prepared a text-book which, in the earlier stages, deals with the plant in the manner we have indicated, by simple experiments capable of repetition by the scholars. They pass on to more special topics, such as cross-fertilisation and the raising of new varieties, diseases of plants, insect pests, crops and stock, dairying, &c., all treated in a simple and attractive fashion, with a great wealth of illustrations, admirably selected and reproduced. The conditions dealt with are, however, so distinctively American as to render the book of little service in English schools, though the teacher himself may obtain from it some hints as to method and many excellent illustrations.

NO. 1777, VOL. 69]

*The Praxis of Urinary Analysis. A Guide to the Chemical Analysis of Urine.* By Dr. Lassar-Cohn, Professor in the University of Königsberg. Authorised Translation by H. W. F. Lorenz, A.M., Ph.D. Pp. vi + 58. (New York: John Wiley and Sons; London: Chapman and Hall, Ltd., 1903.) Price 1 dollar.

THE object of this little book is stated to be to give directions for the chemical determinations of the ordinary constituents of urine and of the stomach contents that are of value for diagnosis. Even with this limitation, the directions given are too brief, especially as regards those for quantitative estimations. For the detection of albumen the heat test, and for sugar Trommer's test, alone are mentioned. For the quantitative estimation of sugar, it is stated that titration with Fehling's solution is only suitable for chemical laboratories, because the solution must be freshly prepared, and, "secondly, and this is much more annoying, it is extremely difficult to determine the end of the reaction, for solutions of the proper strength can be bought nowadays" (p. 38). The translation must have gone astray here. As regards practical value, the two pages upon the quantitative estimation of sugar might have been omitted.

R. T. HEWLETT.

*Studies in Physiology, Anatomy and Hygiene.* By J. E. Peabody, A.M., Instructor in Biology in the Morris High School, New York City. Pp. xviii + 332; 147 illustrations in the text. (New York: the Macmillan Co.; London: Macmillan and Co., Ltd., 1903.) Price 5s. net.

THIS is one of a numerous class of books suitable for use in high schools and similar institutions. As its title implies, it gives, in addition to the principles of physiology, as much anatomy and also, it may be mentioned, chemistry as is necessary for the understanding of the bodily functions; the application of such knowledge to everyday life (hygiene) is also pointed out in a sensible and practical way. A book of this character does not call for any lengthy review; it is sufficient to say that after a careful perusal we are convinced that it will fulfil the rôle the author wishes it to play. It is clearly written, well illustrated, and, what is more important, is unusually free from errors.

*Arithmetic.* Part ii. By H. G. Willis, M.A. Pp. viii + 236 + xxxix. (London: Rivingtons, 1903.) Price 1s. 4d.

THE senior mathematical master of Manchester Grammar School here continues his plan of supplying examples in arithmetic grouped in series so as to furnish two or three lessons a week for a term. These exercises cover the parts of the subject studied in schools which were not dealt with in the author's former book. Oral questions are inserted at the beginning of each exercise, and answers to all examples are provided.

*Arithmetical Types and Examples.* By W. G. Borchardt, M.A., B.Sc. Pp. xii + 367. (London: Rivingtons, 1903.) Price 3s. 6d.

THIS volume is, the author states, intended to stand between the complete text-book of arithmetic and the mere compilation of examples. Each exercise is preceded by a model worked-out example, and a few explanatory notes are added. Most of the recommendations of the recent committee of the Mathematical Association have been adopted, and full answers are given. We notice that graphical methods are made use of, and logarithms are employed to facilitate the calculation of compound interest.