

than castaways (Nos. 167, 169). In another case, "as the greater part of one side is flat . . . it is evidently done for the purpose of being held in the hand" (p. 86). Again, "the object of making such an instrument is clear," namely, "for insertion in a club" (pp. 94, 95). "There can be no doubt that . . . they have been, or were intended to be, inserted into sockets" (p. 109). No. 159, in which "we have a shaft-smoother, borer and knife included in one object" (p. 116), must have been the delight of some Palæolithic schoolboy! Where statements of opinion occur in such form as "I have no doubt," they are of course justifiable; but in this sceptical age it is risky to say "there can be no doubt." It is quite refreshing to hear that there are implements whose "use is almost beyond conjecture" (p. 98). Most likely differentiation in the use of tools did not go far in Palæolithic times.

In the illustrations it would seem that in some cases justice has hardly been done to the specimens, or we should not be told by so experienced a person as the author that No. 144 (Plate ii.) is "the finest example of Palæolithic work" that he has seen. There is, too, a deficiency that should be supplied in another edition: a map and a general section of the district would much help most readers; and these could well be given instead of some of the foreign objects, such as the eternal carved reindeer, &c., without which no anthropological work seems to be thought complete, and which, by frequent repetition, have grown to be nearly as irritating as the faces and figures ever obtruding themselves from the advertising columns of newspapers and magazines.

The frontispiece, by Mr. Worthington Smith, should be acceptable to the advocates of women's rights. The woman is represented as the skilled artist, whilst the man is the mere labourer!

OUR BOOK SHELF

Hand-book of Practical Botany for the Botanical Laboratory and Private Student. By Prof. E. Strasburger. Edited from the German by W. Hillhouse, M.A., F.L.S. (Swan Sonnenschein, Lowrey, and Co., 1887.)

PROF. STRASBURGER'S well-known work, "Das botanische Practicum," has already been reviewed in the pages of NATURE (vol. xxx. p. 214), so that a short notice may suffice for the present hand-book, which is essentially a translation of the smaller German edition. Only the account of the fall of the leaf (pp. 156-59) has been taken from the larger work.

The present edition has been fully revised by the author, and also contains a considerable number of editorial notes and additions. The latter are usually indicated by being inclosed in brackets. It would, perhaps, have been better if this had been done throughout, especially in the introduction. A number of additional figures have been inserted by the editor. These are almost all reproductions of familiar text-book illustrations. Many of them certainly come in well, but we cannot help feeling that the constant reappearance of old figures has become rather wearisome, and that in this instance it tends to take off from the freshness which was so pleasant a characteristic of Prof. Strasburger's "Practicum."

We much regret that no account of any of the seaweeds finds a place in this edition. The admirable description of *Fucus* in the larger treatise of the author might well have been introduced here, while we think that the editor would have been well advised to add an

example of the red seaweeds on his own account, or at least to reproduce Prof. Strasburger's description of the fresh-water *Batrachospermum*. It is easy to see why the author, writing for German elementary students, omitted all reference to seaweeds in his smaller edition. In England we are in a very different position, and it is a pity that students should not at once be made acquainted with plants which are so instructive and so easily accessible.

As the editor explains in his preface that the translation was executed at a time of serious pressure, it would be unfair to enter into any detailed criticism. It must, however, be admitted that the signs of haste are very frequent, and that there is much need for revision in a future edition. There are one or two instances of this which cannot be quite passed over. At p. 11, "durchschnittlich" which means *on the average*, is translated "sectionally," while at p. 49 we have "carefully," where the author says "with advantage" ("mit Vortheil"). At p. 169, note 2, "perfection" should be "development," while on p. 208 the statement that "we know the angular outline of the crystals [in *Spirogyra*] even without reagents," has an odd effect. The word should of course be *recognise*. At p. 67 the use of the word "pits" for the deep depressions ("Grübchen") which lead down to the stomata in *Aloe*, &c., seems to us likely to confuse the beginner. The phrase "starch-builders" (p. 43, &c.) strikes us as awkward, and is certainly not accurate as a translation. The use of the term *laticiferous cells*, in speaking of *Chelidonium*, is unfortunate. The organs in question of course come under the head of *laticiferous vessels*.

In conclusion we may express a doubt whether the un-English form "fibro-vasal" has any advantages over the familiar word "fibro-vascular."

The appendices have been much expanded from the original indices of the author, and should be of great use to the student, to whom the book as a whole will be extremely welcome. D. H. S.

Elementary Practical Biology—Vegetable. By Thomas W. Shore, M.D., B.Sc. (London: Churchill, 1887.)

THIS book is welcome more as a sign of the ever-growing attention paid to plant-structure than for any peculiar merit it has as a guide to the subject. The author fairly expresses his indebtedness to such practical books as Bower and Vines's, and claims originality only for his arrangement and treatment of the subject. The arrangement is as follows:—First comes an introduction dealing with the necessary apparatus and the preparation, &c., of objects. This is very concisely and sensibly done. Part I. deals with general vegetable morphology, treating in due sequence of the cell, the tissues, the systems of tissues, the apices of stems and roots, and cell-multiplication or cell-reproduction. Part II. is devoted to the Cryptogamia, beginning with the Fungi and working up to the vascular forms. Part III. is confined to the Gymnosperms, and Part IV. to the Angiosperms. So much for the arrangement. There may be no guide to practical work covering precisely all these types in this way, but text-books are by no means wanting which contain this arrangement of matter. The originality here is therefore not at all striking—perhaps fortunately so. As for the treatment, the student is conducted through the course with a baldness in the directions to note this and observe that, which reminds one of the style of a personal conductor through an historic building. The book has a purely practical aim, with the excellent purpose of preventing "cram"; but a student who should undergo this course of instruction, noting and observing no more than he is here directed to do, would find himself, at the end of it, the dispirited possessor of a mass of information which would result in a sad fit of mental indigestion. A practical guide of this kind throws too much of the burden of instruction upon the lecturer whose course accompanies