

vantage. The author refers throughout to the kilowatt-hour as the B.T.U., which is a contraction for the Board of Trade (electrical) unit. It is therefore liable to be confused with the British thermal unit (B.Th.U.). In this edition a new chapter on polyphase meters and the measurement of polyphase power has been added, all the well-known mathematical theorems being clearly given. We sometimes wonder whether these theorems will be included in the school studies of the coming generation.

A. RUSSELL.

NATURAL HISTORY OBSERVATIONS.

The Young Observer's Handbook. By W. P. Westell. Pp. 317. (London: McBride, Nast, and Co., Ltd., 1918.) Price 7s. 6d. net.

THIS book will be useful in giving practical hints to young observers who have the root of the matter in them. It gives hints about collecting, preserving, and mounting; about microscopic work and photography; about keeping pets and making little museums; about aquaria and vivaria. It also suggests how the young naturalist may set about exploring shore-pools, ponds, and other haunts of life; or how he may make much of the wild life of a garden. On the last topic we have the best part of the book. The idea of providing an all-round introduction to practical Nature-study is good; the mood of the book is wholesome; and the text has been kept simple. We are sorry to have to say that the style is easy-going and inelegant. But there is in Mr. Westell's work an enthusiasm for Nature-study that inclines one to forgive a good deal. Young observers will find in the book many suggestions which will make them more efficient, but we think and hope that they will, even when grateful, resent the author's tendency to "talk down" and his not infrequent wordiness.

The book is liberally illustrated with one hundred and fifty photographs, diagrams, and sketches, many of which are of much interest. We wish Mr. Westell's standard of precision and accuracy had been higher, for it is by example as much as by precept that young observers learn that they can never go far unless they are doggedly precise and accurate. Besides a frequent vagueness in the book, there is a lack of carefulness, which is regrettable. Thus the figure of a so-called Nautilus is quite wrong. It is a fictitious Nautilus, which should not have been allowed to figure in a scientific book. It is, we think, a pity to tell boys and girls that "newts pass through a similar metamorphosis to their relatives, the frogs and toads. They also have, like them, a supplemental breathing apparatus when grown up, consisting of pores in the skin." Many other examples might be given. Changing the subject a little, we do not think that it profits much to write: "I do not know that it matters whether the young naturalist should be aware of the fact that some fishes have teeth, whereas others are toothless. We do not judge a man or woman, a boy or girl, by being toothless. We judge him or her by the life that is led, and as such we may

NO. 2536, VOL. 101]

also judge fishes." But this Daniel come to judgment has not judged rightly in including in his handbook for young observers, with a delightful "foreword" from Marcus Aurelius (to which name the author characteristically adds "Antonius"), three lists of the old horrors of connate leaves, ochreate stipules, runciform shapes, æterio of follicles, and the regma.

OUR BOOKSHELF.

A Flora of Epsom and its Neighbourhood. By the Rev. T. N. Hart Smith-Pearse. Pp. ix+107. (Epsom: L. W. Andrews and Son, 1917.) Price 3s. 6d. net.

THE late Headmaster of Epsom has worthily carried on the traditions which he established at Marlborough, and in his flora of Epsom and the neighbourhood has produced a very useful little book.

The flora, which includes a good map of the district, is the outcome of observations made between the years 1889 and 1914 by Mr. Hart Smith-Pearse and masters and other members of the Epsom College Literary and Scientific Society. The account suffers a little, no doubt, owing to the absence of records during school vacations in April and August, not so much in the omission of plants, perhaps, as in the records of the first flowering of certain species.

These records of the earliest and latest dates of flowering are a valuable addition to the flora, and a particular feature of the natural history work, both at Marlborough and Epsom.

The London Catalogue is followed as regards specific names and the numbering of the orders and genera, and in comparison with the Catalogue for 1908, it is noted that twelve orders and 184 genera are not represented in the flora.

The interest of the book is enhanced by the attempt which has been made to give the derivation of each generic name. It is unfortunate that in the case of names from the Greek, the Greek word is not given as a guide to the pronunciation. The author has, however, taken care to accent all the names, and we hope that some day the proper pronunciation of *cle'matis* will become general.

As to *Fumaria*, we believe the name to have been used with reference to the resemblance of the grey-leaved plants to smoke issuing from ground, rather than to the smell of the plants. Certainly the old authors referred to the fumitory as *fuma terrae*.

The study of natural history as fostered by the Rev. T. N. Hart Smith-Pearse, both at Marlborough and Epsom, is of the utmost value, as boys who have learnt how to observe, thanks to the traditions he has established, well realise. As an old Marlburian, the writer fully agrees that field botany, properly studied, will not fail to bear fruit in after years. "It is," as the author says in his preface, "a branch of education which it is foolish to neglect, for it may often lead a boy to find his true career, and seldom fails to add to his future happiness and enjoyment." A. W. H.