

the book, but sadly needed by the reader, of the important errors, with specially prepared tables to facilitate calculation.

The extreme importance of the collimation error and its surprising possible magnitude are pointed out, and a very neat way of ascertaining if the telescopic axis is perpendicular to the index mirror when the arm is suitably turned is described, but it is unfortunate that this is not available in all sextants as made.

One fault must be insisted on. The use of the signs and " for feet and inches instead of the abbreviations ft. and in. is bad enough when used by engineers, but then it is rare that there is fear of confusion. The author, however, gratuitously causes confusion in a book which is bristling with the signs ' and " in their proper meaning by using the symbol " for inches even in the same sentence with ' in its proper meaning. It is to be hoped that this and one or two typographical errors will be corrected in a future edition.

C. V. B.

The British Journal Photographic Almanac, 1910.
Edited by George E. Brown. Pp. 1320. (London: Henry Greenwood and Co.) Price 1s.

THE present issue of this very useful volume is drawn up on the same lines as those of its immediate predecessor, and its contents are of the usual essence of photographic matter on all topics, which makes it such a valuable *aide mémoire* to the working photographer. Commencing with the usual calendar, which begins on p. 407, and not on p. 447 (as it is incorrectly indexed, by the way), there follows the useful directory of photographic societies and bodies. An interesting chapter on lens calculations by mental arithmetic, written by the editor, precedes the large section on the epitome of progress by the same authority. This latter portion is always one of the chief contributions to the volume. Then follows a description of the recent novelties in apparatus, which occupies nearly 100 pages. Formulæ for the principal photographic processes, the developing formulæ of the principal plate and paper makers, miscellaneous information, and the usual large number of valuable chemical, exposure, optical, and other tables, bring the volume to a conclusion.

Another feature of this publication, and one which is so often referred to by those who have the book in their possession, is the excellently indexed mass of advertisements in which the main text of the book is sandwiched.

The volume should find its usual place in every photographer's library.

Outlines of Bacteriology (Technical and Agricultural).

By Dr. David Ellis. Pp. xii+262. (London: Longmans, Green and Co., 1909.) Price 7s. 6d. net.

THE general plan of this book is excellent, but we doubt if the various subjects are dealt with in sufficient detail to render the book of much practical utility to the student. To attempt to deal with disease-producing organisms and all the technical applications of bacteriology in 260 short pages is an impossible task if anything more than general principles is to be considered.

The contents of the book include the general morphology and biology of the bacteria, a subject to which the author has himself contributed, sterilisation, pathogenic bacteria, sulphur and iron bacteria, preservation of food products, nitrification, fermentation and ferments, and their industrial applications (e.g. beer, butter, cheese, tanning, tobacco, &c.), and sewage disposal.

Unfortunately, a number of errors disfigure the text.

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Thus on p. 109 a classification of proteids is given in which one class is termed "amyloids" and is stated to be insoluble in gastric juice, globulins are said to be soluble in dilute acids, and casein is given as an example of a derived albumin, and is said to be soluble in dilute acids. A number of mistakes also occur in the section dealing with pathogenic organisms. In the section on the preservation of food-stuffs by heat, while canning is mentioned, there is no reference to the sterilisation or the pasteurisation of milk. The names of plants yielding flax, hemp, jute, &c., are not correctly given, and on p. 245 a paragraph dealing with the *Bacillus enteritidis* of Gärtner is hopelessly wrong.

The book is clearly printed, and illustrated with a number of figures. Many of these are very diagrammatic and drawn to no scale, so that the reader sees the anthrax bacillus and influenza bacillus depicted about the same size, which is somewhat misleading.

R. T. HEWLETT.

A Descriptive Catalogue of the Dobrée Collection of European Noctuae. Compiled by H. B. Browne. Hull Museum Publications, No. 63. Pp. xv+156. (Hull: A. Brown and Sons, Ltd., 1909.) Price 1s. net.

THE late Nicholas Frank Dobrée, of the New Walk, Beverley, who died in 1908, at the age of seventy-seven, formed a very valuable collection of Palæartic Noctuae between the years 1871 and 1888, which he subsequently presented to Hull Museum, on the understanding that a complete catalogue should be published. We presume that it will be preserved intact, for we are convinced that special collections of all kinds, whether literary or scientific, are of far greater permanent value whenever it is possible to preserve them thus, than when they are (sometimes unavoidably) dispersed, or even broken up to be incorporated with larger collections. The collection includes longer or shorter series of 654 species, more than 300 named varieties and aberrations, and 720 specimens of preserved larvæ. These are contained in forty-two cabinet drawers, and Mr. Browne has carefully noted the origin of every specimen according to Mr. Dobrée's note-books, and added short descriptions of a large number of aberrant specimens, named or otherwise. The work is of much importance to all students of the interesting group of moths of which it treats.

The Human Race: its Past, Present, and Probable Future. An essay by J. Samuelson. Pp. xii+192. (London: Swan Sonnenschein and Co., Ltd., 1910.) Price 3s. 6d. net.

IN part of this small volume is summarised the whole history of the human race—man's origin and material progress, the history of his vices and virtues, and of his mental, social, and political development. That such a summary must be very superficial is only to be expected, and the author claims very little for it, but hopes "that it will at least stimulate inquiry and serious study on the part of youths about entering life." Its chief fault appears to us to be that there is no clear distinction drawn between changes in man himself and changes in his surroundings. Thus, for example, under the heading "Man's Mental Progress" are catalogued a number of discoveries and inventions, such as the spectroscope and telephone, which are not evidence of mental progress at all if one takes the term to mean improvement of mental powers. It is also to be regretted that, although the author appears to be a believer in evolution, no mention is made of heredity as a factor possibly affecting the history of mankind.

E. H. J. S.