his various problems without always recurring to the mathematical point of view. Unfortunately, one word must be said regarding the typography. The present reviewer has seldom read a book so badly corrected for the press. There are two pages of corrigenda; but a full statement of all the small misprints would with difficulty be contained in four or five pages more. If it is not *c* for *o* or *e*, it is *u* for *n*, or *l* for *t*, or *b* for *h*, or *das* for *dass*. This is the more to be regretted because—granted the author's point of view—the *i*'s of the philosophy are quite carefully dotted.

BRITISH MINERALS.

A Handbook to a Collection of the Minerals of the British Islands in the Museum of Practical Geology. By F. W. Rudler, I.S.O. Pp. x+241. (London: H.M. Stationery Office, 1905.) Price 1*s*.

SINCE his retirement from the post he so long and efficiently held as curator of the Museum of Practical Geology, Mr Rudler has installed in that museum a collection illustrative of the modes of occurrence of British minerals. The museum has long possessed collections of British rocks, fossils, and ores, the last named arranged under the various metals which they contain. In the new collection, which is neatly arranged in twelve table-cases, the minerals found in each district are brought together; half the space is allotted to Cornwall and Devon, one-eighth to Scotland, Ireland, and the Isle of Man, and the remainder to the rest of England, the divisions being roughly according to the several mining districts, with a general group for the minerals of the Neozoic strata. The specimens, to the number of 1652, have mostly been selected from the Ludlam collection, which was bequeathed to the museum in 1880; though mostly small in size, they are of excellent quality. In addition to the name and locality attached to each specimen, there are many explanatory labels in the cases, and the present volume admirably serves the purpose of a guide to the collection.

The volume is by no means a tedious catalogue or descriptive list of all the individual specimens, but is rather an extremely readable and interesting account of the mode of occurrence and history of the more common British minerals, especially those which are of economic importance. Instead of long descriptions of the characters of species, much is said of their paragenetic relations, and many valuable suggestions are made as to their possible modes of origin. The book will therefore be found interesting and instructive not only to mineralogists, but also to geologists and miners; whilst quite apart from the collection, for which it is primarily intended, it will have a permanent value as a treatise. In this connection mention may be made of the numerous and extremely valuable references to original authorities consulted in the preparation of the work.

The mode of treatment is a novel one, and necessarily involves a certain amount of repetition, especially in the case of some of the more commonly occurring minerals, such as quartz, calcite, galena, &c., which may be found in almost all the different districts; but this repetition is not tedious. As an example, the district of Cornwall and Devon may be taken, in which the main groups are as follows:—cassiterite, minerals associated with cassiterite, copper sulphides and sulpho-ferrites, copper-bearing minerals of the gozzans, arsenates and phosphates of the copper-gozzans, ores of lead, zinc, antimony, &c., sulphides and sulpho-salts, ores of iron, &c., minerals of the rarer metals, the spars of the mineral veins, miscellaneous minerals.

Apart from a few minor misprints, the only point which calls for criticism is that undue importance seems to have been attached to many quite trivial and local names. As for the printing, there is certainly much room for improvement; the lines are so badly broken that it is surprising that the whole did not fall to pieces in the course of printing.

L. J. S.

OUR BOOK SHELF.

Moths and Butterflies. By Mary C. Dickerson. Pp. xviii+344; with 200 photographs from life by the author. (Boston, U.S.A., and London: Ginn and Co., n.d.) Price 5*s*. net.

THIS is a prettily got-up book, intended for the training of classes in "nature-study," with reference to a considerable number of common and conspicuous North American butterflies and moths, the life-history of which is very fully described and illustrated. The concluding chapter, on collecting, keeping, and studying, recapitulates the points to be noted in practical observations on the insects themselves.

To English readers the book will be useful for the information it supplies about American forms, and also as indicating a similar method of study for British insects, but many of the species here noticed are much larger and more conspicuous than those likely to fall under our own observation, among them being several species of Papilio, and large Saturniidæ.

The figures, of which (including apparatus, &c.) there are 233 in all, are generally very good, though some are indistinct. The frontispiece, representing a Smerinthus at rest, and Fig. 17, on p. 147, representing a procession of the young caterpillars of Saturnia, may be specially noticed. But it looks odd to see a Smerinthus closely allied to our own *S. ocellatus* called "a most beautiful little moth" (p. 232); and, though we do not object to the use of appropriate English names, we are sorry to see on p. 231 a Sphinx allied to *S. convolvuli* called "the Humming-Bird Hawkmoth," a name by which the very different *Macroglossa stellatarum* has been known all the world over, ever since the commencement of the study of entomology.

We had expected to find some notice of the gipsy moth, the crusade against which has recently been given up in America in despair, but find only a passing reference. A few British species are noticed, such as *Vanessa antiopa*, called in America the mourning cloak, a translation of its German name; *V. atalanta*, *Pieris rapae*, &c.

A great deal of useful general information is given in the book, and it seems on the whole to be careful and accurate. One statement, however true in the abstract, ought not to have been made without qualification or explanation in a popular book. On. p. 267 we read, "We are familiar with the fact that all living