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DESCRIPTIVE MINERALOGY

Text-Book of Descriptive Mineralogy. By Hilary Bauer-
man, F.G.S. 8vo; pp. vi. 399; 237 figures. (London:
Longmans, Green, and Co., 1884.)

THIS is the companion volume to the "Systematic Mineralogy," by the same author, published in 1881. As far as space admits Mr. Bauerman endeavours to describe all the more important mineral species. His remarks about the names of minerals and their derivations are well chosen; and both mining students and teachers of mineralogy should note the following paragraph:—"In the case of minerals worked as metallic ores, the ordinary commercial names should always be used where possible. Thus for all purposes copper pyrites, tinstone, and zinc blende are preferable to chalcopryrite, cassiterite, and sphalerite."

The classification adopted by the author "is in the main similar to that of Rammelsberg's 'Mineral-Chemie.'" Each description gives the form, the structure, the composition, and chemical characteristics, and concludes with the occurrence and distribution of the mineral. The crystallographic form is indicated both by Miller's notation and that of Naumann; and the figures of crystals are from the excellent wood blocks used originally for Brooke and Miller's "Mineralogy."

As might be expected from the author's wide experience as a traveller, the parts relating to occurrence are generally quite as complete as is compatible with the size of the volume; but strange to say, under the head of copper pyrites, the author omits all mention of the great mines of the provinces of Huelva in Spain, and Alemtejo in Portugal. It is true that they are not forgotten by him when speaking of iron pyrites; but Rio Tinto, which produces more copper than any other mine in the world, surely deserves notice quite as much as Devon Great Consols, Mellanear, or South Caradon. We must here correct an error of the author, who places Buitron in Portugal, whereas it is in Spain; and the great Portuguese mine is at San Domingos, not at Pomaron, which is simply the port of shipment, about eleven miles from the actual workings.

The author's acquaintance with Cornwall is not so exact as might be expected, for we find him making the statement that "in Cornwall" the tourmaline "is almost invariably known by the old German miners' name of *Schorl*"; in reality the Cornish term is *Cockle*. Fluor is omitted from the list of minerals associated with tinstone, and it is by no means so certain, as the author thinks, that kaolin has been produced by the action of atmospheric agencies upon the felspars of granite. There is, on the contrary, much to be said for the theory that the decomposing agents came from below. The remark that copper pyrites has been found in Dolcoath and neighbouring mines "in zones alternating in depth with tin ore," would lead one to suppose that there were several copper ore zones in the mines, which is not the case. The published section of Dolcoath shows only one copper zone, including, roughly speaking, the upper half of the workings, and one

tin zone, comprising the lower half. No doubt tin ore was obtained also from the *gossan* or ferruginous capping of the vein, and it might therefore be said that there were two tin zones with an intermediate copper zone, but this is not what is stated by the author. Under pyrites we read:—"In Cornwall the common term is Mundick, the varieties being distinguished as sulphur, copper, or arsenical mundic, according to the prevailing constituents." Does the author mean by this that a Cornish miner would call copper pyrites "copper mundic"? If so, he is surely mistaken.

We regret that there are occasional errors of spelling in the names of minerals and places. Thus "Freieslebenite" appears several times without the second "e," though it stands correct in the Index, and "Meconite" might puzzle the novice who had never heard of Meionite. However these are slight blemishes, and both they and the few other mistakes can easily be corrected in a second edition, which no doubt will be required, as Mr. Bauerman's manual is clear, compact, and handy, and is likely to be a favourite with students of mineralogy.

THE MOSSES OF NORTH AMERICA

Manual of the Mosses of North America. By Leo Lesquereux and Thos. James. 8vo, pp. 447, with Six Plates Illustrative of the Genera. (Boston: S. E. Cassino and Co.; London: Trübner and Co. 1884.)

WE have much pleasure in calling the attention of bryologists on this side of the Atlantic to this excellent handbook of the "Mosses of North America." Many contributors have aided in its preparation, and a series of unfortunate disasters have delayed its publication at least ten years beyond what was expected, a delay which, however, has brought with it the compensation of greater completeness. Its foundation was laid by W. S. Sullivant, who contributed to the first edition of Gray's "Manual of the Plants of the Northern United States" in 1848 a synopsis of the mosses then known within the same territory, which were not more than about 200 species. In the second edition of the "Manual," published in 1856, the number of species was doubled, and five plates were given to show the essential characters of the genera. Of both these two treatises a few separate copies were also struck off. At that time there were four excellent bryologists resident in the country who were working actively—Sullivant, Lesquereux, Austin, and James—so that rapid progress was made. When the third edition of the "Manual" was issued, it was planned that Sullivant, in cooperation with Lesquereux, who worked at mosses with Schimper before he emigrated to America, where he has done such excellent work in fossil botany, should undertake an improved handbook of the mosses as a separate publication. Sullivant died in the spring of 1873 without this being carried into effect. His collection of specimens, drawings, and manuscript notes was bequeathed to the herbarium of Harvard University, which under the charge of Prof. Gray has for many years been the main centre for botanical work in the United States. It was planned that Mr. T. P. James, who belonged to Philadelphia, but who removed to live at Cam-