

but in some cases, *e.g.* in *Todea*, we find lignification almost identical with that of certain gymnosperms.

On the whole the author may be congratulated on having attained the end which he had in view, namely, by tracing the history of a definite organ through the vegetable kingdom, to demonstrate the fruitfulness of the phylogenic method. F. D.

OUR BOOK SHELF.

Economic Geology of the United States. By Heinrich Ries. Pp. xxi+435. (New York: The Macmillan Company; London: Macmillan and Co., Ltd., 1905.) Price 2.60 dollars net.

THIS volume embodies the elementary course of economic geology at Cornell University, where the author is assistant professor. Some knowledge of geology and mineralogy on the part of the student is presupposed, and the work deals exclusively with North American mineral deposits. At the same time North America is so preeminently the continent of mineral deposits, nearly all types and forms being represented within its vast mineral areas, that a treatise on American economic geology is nearly the same thing as a study of mineral deposits in general.

The mode of arrangement differs from that of other books on the same subject in that predominance is given to the non-metallic minerals, the value of the production of which exceeded that of the metallic minerals in 1903 by thirty million pounds. The twenty chapters into which the book is divided deal respectively with (1) coal; (2) petroleum, natural gas, and other hydrocarbons; (3) building stones; (4) clay; (5) lime and calcareous cement; (6) salts; (7) gypsum; (8) fertilisers; (9) abrasives; (10) minor non-metallic minerals; (11) mineral waters; (12) soils and road materials; (13) ore deposits; (14) iron; (15) copper; (16) lead and zinc; (17) gold and silver; (18) silver lead; (19) aluminium, manganese, and mercury; and (20) minor metals.

In each chapter the treatment is the same. An account of the minerals is followed by particulars of their distribution in the United States, with sketch maps, details of their use, recent statistics of their production in the United States and in the world, and a carefully selected bibliography. The twenty-five plates reproducing photographic views of mines and the ninety-seven diagrams in the text are alike excellent. Altogether the work is an admirable one, and we strongly commend it to teachers in this country as a source of concise, accurate, and recent information regarding the mineral deposits of the United States.

Botanische Jahrbücher. Edited by Dr. A. Engler. Vols. xxxiii., xxxiv., and xxxv. Parts i.-iii., with index vols. i. to xxx. (Leipzig: W. Engelmann, 1902-5.)

THE series of papers produced under the direction of Dr. Engler, as the "*Beiträge zur Flora von Afrika*," continues to engage the attention of workers at the botanic museum in Berlin. The papers that give merely descriptions of new species are chiefly serviceable to monographers, but the results become more interesting when they are collated for a genus or an order, as in the revision of the *Ochnaceæ* by Dr. Gilg. In a short article that will be found in *Beiblatt*, No. 79, Dr. Engler summarises the general progress of the study of African botany in Berlin, and indicates where further collections and explorations are required. He refers to Dr. Fülleborn's collections of the lower algæ and *Bacillariales* taken from Lake

Nyassa. They have been examined by Dr. Schmidle and Dr. Otto Müller, and their descriptions and deductions are published in these volumes. Other systematic compilations include a contribution to the flora of Madeira and the Canary Islands by Mr. J. Bornmüller, some notes by Drs. Gilg and Loesener on the flora of Kiao-chau, the Chinese territory that was occupied by Germany in 1898, and the "*Fragmenta Phytographiæ Australis occidentalis*," written by Drs. Diels and Pritzel. Among the cryptogamic contributions, Mr. G. Hieronymus publishes an account of the pteridophytes collected in Ecuador and Colombia by Mr. H. C. Lehmann, German Consul, and Mr. E. Lemmermann deals with the algal vegetation in the Sandwich Islands. Among the ecological papers, Mr. J. Holmboe sketches the botany of the Norwegian moors. Mention should also be made of the notices in the *Beiblätter* of addresses delivered before the Society of Systematic Botanists, of which not the least interesting is that by Prof. K. Fritsch discussing the systematic position of the monocotyledons.

The index to the first thirty volumes published in 1904 is an important reference book to systematic botany from 1881; the systematic index, and the catalogue under countries, will be found most useful.

The Practical Photographer. Edited by the Rev. F. Lambert. (Library Series.) No. 27; *Photographic Optics and Lenses*, pp. xxiv+64. No. 28, *The Optical Lantern for Projection and Enlarging*, pp. xxiv+64. (London: Hodder and Stoughton.) Price, each vol., 1s. net.

THESE two volumes form the December and January issues of this useful series of photographic handbooks. As usual, each is prefaced by a short essay on the pictorial work of some well known photographer written by the editor, and in these cases we are made acquainted with the photographic work of Mr. W. A. I. Hensler and Mr. Charles H. L. Emanuel. They are also accompanied by a series of reproductions from the best works of these photographers, which illustrate, more than words can describe, the particular styles of treatment.

In the volume on photographic optics we have a series of notes by numerous authors on various points relating to lenses. These are more or less miscellaneous in their nature, but the several items are generally clearly described, and may prove serviceable. Numerous diagrams and process reproductions are included in the text.

The volume on the optical lantern contains many useful wrinkles which will materially aid the beginner and prove useful to those who are already acquainted with the manipulation of a lantern. Forms of lanterns, illuminants, condensers, reflectors, are all fully treated, and in addition there is much miscellaneous information on lantern optics, and sundry items pertaining to lantern work. Included in these pages are process reproductions of several photographs, details about which are given under "*Pictorial Notes*."

The Sanitation of a Country House. By Dr. Harvey B. Bashore. Pp. vi+103. (New York: John Wiley and Sons; London: Chapman and Hall, Ltd., 1905.)

THIS little book would form a useful, popular, and non-technical guide on sanitary matters to anyone about to build a country house, but is necessarily one for America, and the practice recommended and details given would not always suit this country. The illustrations and diagrams, sixteen in number, are excellent.