tion in completing the monographs which were in preparation by Professor Marsh at the time of his death.

The addition of this immense collection of most important American fossil remains to the treasures already assembled in the National Museum will, I am sure, afford the greatest satisfaction to all workers in the field of paleontology both at home and abroad, and you will permit me to add a personal word in appreciation of your untiring efforts to facilitate in every way possible the great task connected with the removal of the collection from New Haven to Washington.

During the coming year I expect to have two preparators engaged in working out of the matrix specimens still uncleaned, and confidently hope that it may be possible in a few years to have the entire collection made available for study and a selected series for public exhibition. From this latter series the public will be able to form a correct idea as to the number, variety and great size of these wonderful extinct creatures of the western country, and will undoubtedly be impressed with the extent and importance of the work of the paleontological divisions of the Geological Survey and the marvelous industry and intelligence displayed by Professor Marsh in bringing together this great collection.

Yours respectfully,

(Signed) S. P. Langley,
Secretary.

The Honorable Charles D. Walcott,
Director United States Geological Survey,
Washington, D. C.

SCIENTIFIC BOOKS.

On the Building and Ornamental Stones of Wisconsin. By E. R. Buckley, Ph.D. Bull. No. IV. Economic Series No. 2. Wisconsin Geological and Natural History Survey. 1898.

The first attempt at a systematic investigation of the building stones of the United States was undertaken by Dr. G. W. Hawes under the auspices of the 10th Census. With the untimely death of Dr. Hawes the completion of the work fell into the hands of others, none of whom were experienced and some of whom had received no training such as should fit them for special investigations of this nature. Under such conditions it is not strange that the printed volume* should have been somewhat disappointing. Nevertheless it furnished a beginning and at least served to show what was not known on the subject.

This was followed in 1887 by Merrill's Handbook of the Collections of Building and Ornamental Stones in the United States National Museum,† which was based upon the Census Collections; and later by Stones for Building and Decoration (Wiley & Sons, New York), the first edition of which appeared in 1891 and the last in 1897. The above constitute the only comprehensive systematic treatises compiled with reference to the United States that have thus far appeared.

Several excellent special and local reports have, however, been made, among which should be mentioned Winchell's report on the building stone of Minnesota,‡ and the reports of Smock on those of New York;§ Williams on the Syenites of Arkansas;‖ Hopkins on the Marbles of Arkansas,¶ the Brownstones of Pennsylvania,** and the Carboniferous Sandstones of Western Indiana;†† Macallie on the Marbles of Georgia;‡‡ H. F. Bain on the

* Special Report on Petroleum, Coke and Building Stone, Vol. X., Rept. 10th Census, 1884.

† Rep. U. S. National Museum, 1886, pp. 275–648.

‡ Vol. I., Final Report on the Geology and Natural History of Minnesota, 1884, pp. 142–194.

§ Bulls. No. 3, New York State Museum, 1888, and Vol. III., No. 10, 1890.

‖ Ann. Rep. Geological Survey of Arkansas, 1890, Vol. II.

¶ Ann. Rep. Geological Survey of Arkansas, Vol. IV., 1890 (1893).

** The Building Materials of Pennsylvania, I. Brownstones, Appendix to Ann. Rep. of the Penna. State College for 1896, pp. 122.

†† 20 Ann. Rep. Dept. of Geology and Natural Resources of Indiana, 1896, pp. 186–325.

‡‡ Bull. No. 1, of the Geol. Survey of Georgia, 90 pp. 1894.

Stones of Iowa;* and lastly that of Mathews and Merrill on those of Maryland.†

The volume noted at the head of this article, bearing the date 1898 but seemingly not issued till the latter part of 1899, is the latest and most pretentious of them all, with the exception of that of the 10th Census, comprising some 566 pages with 49 full-page plates and four figures in the text. The plates include a colored geological map of the State and seven others in which the natural colors and textures of the stone are approximately reproduced by lithographic processes, the remainder being half-tone reproductions of quarry views and stone structures. The work is divided into three parts: (1) Demand, Uses and Properties of Building and Ornamental Stones; (2) Geological History of Wisconsin and Description of Areas and Quarries, and (3) Appendix, On The Composition and Kind of Stones.

The chief interest and value of the work center in part II. (pp. 75–357 inclusive), since the only information heretofore available on these points has been that given in the 10th Census report above referred to, and Merrill's Stones for Building and Decoration. The work has apparently been well and thoroughly done. By far the most interesting stones described, and the ones which on account of color may hope to find a market beyond the State limits, are the Montello, Waupaca, Waushara and Wausau granites, and the Berlin rhyolites. The brown sandstones of the Lake Superior region should, in the Middle and Western States, fill the place of the red brown Triassic stones in the Eastern. In nearly every instance samples of the stone described have been submitted to laboratory tests and their crushing strength, absorptive and general weathering properties ascertained, so far as is possible by these methods. It is a trifle discouraging to note that it was considered necessary to go to the expense and trouble of making over 100 tests of crushing strength on rocks which even a casual inspection would have shown to be sufficiently strong for all practical purposes. Concerning the value of such tests the present writer has expressed himself elsewhere.

* 8th Ann. Rep. Geol. Survey of Iowa, 1898.

† Vol. II., Rep. State Geol. Survey, 1899, pp. 241.

If one were disposed to be critical he might call attention to the carelessness manifested in some of the very few references given, and to the tendency to ignore the work of others, Professor A. D. Conover's paper of fifteen quarto pages in the report of the 10th Census, not even being mentioned. There is, further, a non-convincing air of freshness in the explanation put forward on p. 383, to account for the unfavorable action of freezing temperatures on newly quarried material.

Colored illustrations add to the attractiveness of the book, but are to some extent misleading, giving a perfection of surface and brightness of color, which the materials themselves do not possess. This is particularly the case with the red and pink granites. Plate 34 of the Lake Superior sandstone is also disappointing, as, indeed, is plate 45 of a similar subject in the 10th Census report, and plate 27 in that of the Maryland Survey. The attempt is instructive, as showing the relative merits of lithographic reproductions from colored drawings, as compared with the tricolor photographic process used in the Maryland report, the advantage however, being wholly with the latter.

Very poor taste has been shown in the arrangement of the views of quarries and structures in the half-tone plates, and particularly those numbered 4, 17, 24, 42 and 47. A picture which does not illustrate some definite feature is out of place in a work of this nature, and, if of value, it should be so oriented on the page as to be easy of reference. The fad for placing the several views on one page at varying angles with one another is not readily excusable, and in this particular case the effect is very inartistic as well.

There is much to be commended in the work, but it is not too much to say that it would be more useful if of half the size. The amount of paper involved is out of all proportion to the information contained therein.

GEORGE P. MERRILL.

Untersuchungen über die Vermehrung der Laubmoose durch Brutorgane und Stecklinge. By DR. CARL CORRENS, a. ö. Professor der Botanik in Tübingen. Jena, Gustav Fischer. 1899. Pp. xxiv + 472. 187 figs. Price, 15 M.