university efficiency which can not be measured by any mechanical tests, but which has its root in the personality of the professors.—*The New York Evening Post.*

SCIENTIFIC BOOKS

A Directory of American Museums. Compiled by Paul Marshall Rea. Being No. 1, Volume X., Bulletin of the Buffalo Society of Natural Sciences. 8vo, pp. 360. Buffalo, N. Y. 1910.

The object of this directory is to give, as far as possible, a complete list of the museums of America, using the word in its broad sense, with information as to their purposes, character and extent of their collections, mode of support, manner of administration, staff and publications, with a brief sketch of the history of each institution. It is arranged alphabetically by states and cities, and, with the index, comprises 360 pages, 313 being devoted to the museums of the United States. The collections are listed mainly under certain specified headings; anthropology, art, botany, geology, paleontology, zoology, and the approximate number of specimens on exhibition and in the study series is stated. Great pains have been taken to have this information as exact as possible, and it will be found that in many cases there is a very considerable reduction in the size of collections from that noted in the list prepared by F. J. H. Merrill and that in a few instances there is stated to be "no museum," where one was said to exist in 1903.

The data given, checked by the character of the financial support, and a knowledge of the staff, will furnish a pretty good idea of the size and importance of the institutions noted.

The preparation of the work was authorized in 1908 at the second meeting of the Association of American Museums and the arduous duty of gathering the information and making it ready for publication was performed by Paul M. Rea, secretary of the association. The cost of issuing the work, which has been considerable, was generously borne by the Buffalo Society of Natural Sciences. It was hoped to have had the directory issued as a memorial of the Buffalo meeting of the association, but owing to inevitable delays in securing needed information it did not appear until late in 1910.

As the only directory of American museums previously issued is that prepared by F. J. H. Merrill and published in 1903, by the education department, state of New York, this volume is very welcome. We should have been glad of a brief summary, giving the number of museums in the United States, their total annual expenditure and the number of their staff, but this may well be left for some one interested in the study of statistics.

In conclusion it may be said that if, as Dr. Goode considered, the museum is the most advanced of institutions for the education of the public the United States stands well to the fore.

F. A. Lucas

Studies on the Structure and Affinities of Cretaceous Plants. By Marie C. Stopes and K. Fujii. Phil. Trans. Roy. Soc., London, Series B, Vol. 201, 1910, pp. 1–90, pls. 1–9.

A glance at the above somewhat impressive title might lead one to presume that we have to do with a paper of broad, possibly world-wide, scope, and it is not until we reach page 4 that we learn incidentally that it deals exclusively with material from Hokkaido, northern Japan. Here the authors have been exceedingly fortunate in securing nodules—presumably silicified—in which are preserved fragments of vegetation which indicate the presence of a varied and interesting flora, and suggest, in the manner of occurrence, the English Carboniferous nodules which have yielded such splendid results to Williamson, Scott and others. It is much to be regretted, however, that the present paper does not give more explicit information regarding the geological position of the material, the only data on this point consisting of the following statement: "In nearly every case there are parts of shells of Ammonites in the nodules. These have been described by Yabe, and there is no doubt, as a consequence, that the plants are of Cretaceous age." That the description of the