River. The analyses upon which this opinion is based are too extensive to reproduce here, but those who dwell in the lower Illinois valley and those who have feared the possible effect of the sewage of Chicago upon the water supply of St. Louis should observe the following emphatic statement of Dr. Long: He says: "I believe that it may be safely said that if the whole of the sewage of Chicago were to be excluded from the Illinois River, the condition at Grafton (where it enters the Mississippi) would remain unchanged so far as its organic contents and bacterial organisms are concerned."

The character of the Chicago sewage, the condition of the various tributary streams, the self-purification of the Illinois River and its subsequent pollution by Peoria and other cities are all fully discussed in the report.

The analytical work appears to have been carefully done, but it is to be regretted that certain portions of what is now considered to be a complete water analysis are omitted. For example, the amount of coloring matter was not measured and consequently the determination of oxygen consumed cannot be fully interpreted. The measurement of turbidity was likewise omitted; nor is any mention made of microscopical examinations. Determinations of dissolved oxygen and free carbonic acid, taken in connection with the other observations, would have thrown much light upon the self-purification of the stream. Nevertheless, the results as they stand are of great value and reflect credit upon those who conducted the work.

It is the intention of the Illinois State Board of Health to extend observations of this character to other streams until the sanitary survey of the state shall be complete.

G. C. WHIPPLE.

Leitfaden der Wetterkunde. Gemeinverstandlich bearbeitet von DR. R. BORESTEIN. Mit 52 in den Text eingedruckten Abbildungen und 17 Tafeln. Braunschweig, Friedrich Vieweg und Sohn, publishers. 1901. Price, 6 Mk.

This book is intended as a popular treatise on the weather, for the use of farmers, sailors and others whose pursuits are affected by the weather, and also for the benefit of all who may be interested in natural phenomena. Its object is to give the elementary facts of meteorology and explain the scientific principles on which weather forecasts are made. The author hopes thus to enable his readers to better understand and apply the forecasts as made by the national bureaus and to make forecasts for themselves. The publishers explain that among other new things embodied in the book are the results of the scientific balloon ascents and an account of the various weather services of the world.

The book is interestingly written and well illustrated. The distribution of rainfall and temperature over Europe is graphically illustrated by four colored charts. Perhaps the most attractive feature in the book is the reproduction of the best of the pictures from the International Cloud Atlas, showing in approximately natural colors the different types of clouds, all of which are derived from photographs. This is a feature that other text-books would do well to copy.

The chief criticism of the book is that it is written almost entirely from a German standpoint. The quotations are chiefly from German authors and the illustrations are derived chiefly from German sources. The only map of the world contained in the book is one illustrating the distribution of pressure. Several pages are given to describing the weather service of Germany; only a paragraph is given to the weather service of the United States. The balloon ascents quoted were those made by the German Aeronautical Society, and no mention is made of modern kite work. Perhaps this was intended by the author, as he was writing chiefly for German readers, but a foreigner misses the broad cosmopolitanism such as is found, for example, in the work of Dr. Hann.

H. H. CLAYTON.

Who's Who in America. A Biographical Dictionary of Notable Living Men and Women of the United States. Edited by JOHN W. LEONARD. Chicago, A. N. Marquis and Company. 1901–1902. Pp. xvi + 1304.

The initial edition of this work, published two years ago, made a niche for itself in current literature and a place for itself on the most

convenient shelf of the student; and the second edition, now in distribution, seems still more useful. Primarily the book is a biographic dictionary of a perfection approaching the ideal, in which the lives of prominent Americans are written in sufficient fulness for practical purposes; it is also a directory to prominent Americans by full names and present addresses. Naturally the first question as to the value of such a book connects itself with the classification, *i. e.*, with the definition of prominence and with the editor's success in equitably cleaving the mass of 80,000,000 into portions of 12,000 and 79,988,000, respectively, along the precise lines of the definition. Of course the performance of this task would out-Hercules the classic hero; it can never be done with mathematical precision, and even if it were made right for one day it would be wrong for the next; yet the chief excellence of 'Who's Who in America' lies in the truly remarkable measure of success with which the editor has established and maintained his primary definition. It is this measure of success in classifying prominence which gives the work its greatest utility; for the user may be reasonably certain of finding within it desired facts relating to any celebrity, and this without undue labor of search through irrelevant biographic material.

The 1899 edition contained 8,602 names, of which 752 are omitted in the 1901 edition, 498 by reason of known death, and the remaining 254 for various reasons; the later edition includes 11,551 names. Classified by residence (as they are in the introductory pages), these celebrities are distributed throughout the 45 States, 6 Territories and 1 District of the United States, and 47 foreign countries; 11,137 reside in the United States, 370 live permanently abroad, and 44 do not report. Of those resident in the United States 2,849 are credited to New York, 1,010 to Massachusetts, 889 to District of Columbia, 880 to Pennsylvania and 704 to Illinois; then follow Ohio, 422; New Jersey, 314; California, 291; Connecticut, 266; Missouri, 222; Maryland, 205; and the remaining States and Territories yielding less than 200 each of the aggregate. It would not be easy to class the celebrities by vocation, and the editor has not attempted to do so; but scientists may feel gratification in the fact that their important class has received especial care and effort, and that scientific eminence seems to have adequate recognition—indeed, scarcely a page is without one or more names distinguished in some line of scientific activity. Withal the book is a model of condensation and—considering the extreme difficulty of attaining accuracy in details of biography, bibliography, nomenclature, residence, etc.—a marvel of accuracy.

The new edition, like the old, is enriched by a readable prefatory narration of editorial experience, and still more by suggestive statistical tables, of which that entitled 'Educational Statistics' is a real contribution to knowledge. Of the 11,551 persons biographed, 9,760 furnished educational data, and in 8,141 cases the data permit useful classification. Of these 8,141 persons, 5,775 are collegians and 4,810 out of these graduates; 808 were educated only in common schools, 282 were privately educated, while 31 were self-taught. These figures, with the carefully selected data on which they rest, afford America's strongest argument in favor of higher education; at the same time they reveal the country's unparalleled element of strength in the possibility of eminence to those helped only by the public schools, and even to those not helped at all, along educational ways.

The book is notably fit in size, weight, quality of paper, typography, abbreviations, binding, and other matters which go to make up satisfactory book-making.

W J M.

SCIENTIFIC JOURNALS AND ARTICLES.

The *Botanical Gazette* for July contains the following papers: Charles E. Allen writes 'On the Origin and Nature of the Middle Lamella.' The general conclusion is reached that this structure is not merely the partition wall as laid down, either as a single or a double layer; nor is it merely an intercellular substance or cement, a means for binding the cells together. It is a wall layer with a complicated history, undergoing after its appearance changes in form, in mass, and in chemical composition. Carleton E. Preston has written upon 'Structural Studies of Southwestern Cactaceæ.' From a study of eight representative forms various