

waters with copper sulphate, Professor Whipple rightly estimates as of great usefulness, although usually as a palliative rather than a permanent remedy. Reliance must be placed in the last resort upon aeration, which changes the odoriferous essential oils produced by the microorganisms into inodorous compounds, combined with filtration for the removal of the organisms themselves. The value of this procedure has been clearly demonstrated both experimentally and on a practical scale, and Professor Whipple describes plants in operation at Rochester and Albany and New York City, and at Springfield, Mass., a view of the Springfield aerating fountain forming a very attractive frontispiece for the volume.

About a quarter of Professor Whipple's book is devoted to a systematic description of the more important genera of water microorganisms. The plates of the first edition have been made much more valuable by being colored, and five new plates have been added, one showing the results of the cotton disc filter test and the other four being photomicrographs of important water organisms. C.-E. A. WINSLOW

AMERICAN MUSEUM OF NATURAL HISTORY,  
NEW YORK

*Essays and Studies Presented to William Ridgeway on his Sixtieth Birthday.* Edited by E. C. QUIGGIN. University Press, Cambridge, 1913. Pp. xxv + 656, 93 illustrations.

If a commemoration volume is an index to the scope of the work done by the man it is intended to honor, the Ridgeway volume is indeed a monument to the versatility of the distinguished British scholar. The one drawback about such a work is that only a Ridgeway could adequately review it. There are, for example, 25 papers dealing with classics and archeology—two large but related fields. Then under the head of "Medieval Literature and History" come half a dozen or more important papers.

About half the work is devoted to anthropology and comparative religion. Sample articles under this section include: "The

Weeping God," by T. A. Joyce; "The Serpent and the Tree of Life," by J. G. Frazer; "The Problem of the Galley Hill Skeleton," by W. L. H. Duckworth; "The Beginnings of Music," by C. S. Myers; "Kite Fishing," by Henry Balfour, and "The Outrigger Canoes of Torres Straits and North Queensland," by A. C. Haddon.

Lack of space precludes the thought of reviewing the various articles even in a summary fashion. Only two will be selected for this purpose: "The Contact of Peoples," by W. H. R. Rivers, and "The Evolution of the Rock-cut Tomb and the Dolmen," by G. Elliott Smith. As to the contact of peoples Rivers begins with the formulation of the principle that the extent of the influence of one people upon another depends on the difference in the level of their cultures. He tests the principle by applying it to a study of two complex ethnologic problems, viz.: Australian culture and Megalithic monuments. It is shown that Australian culture is not simple, but complex, this complexity being due to many elements derived from without. These elements are supposed to have been introduced at intervals by small bodies of immigrants whose culture seemed so wonderful to the lowly natives that they were able to wield a far-reaching influence, one in fact which was carried by secondary movements throughout the continent. After a time the culture of the immigrants would degenerate, leaving little that was permanent. The traces of these successive influences, however, would live in magical rites, religion, myth, and tradition. This would account for the highly complex social and magico-religious institutions of the Australians, coupled with the extraordinary simplicity and crudeness of their material and even esthetic arts.

The same principle is called into requisition to account for the presence of megalithic monuments in such widely separated parts of the earth. Megalithic culture is thus carried not by vast movements of a conquering people, but by the migration of small bodies of men, the movement being one of culture rather than of race. Such a view is certainly

in keeping with the peculiar distribution of these monuments, their comparative nearness everywhere to the sea.

In "The Evolution of the Rock-cut Tomb and the Dolmen," Elliott Smith would derive the Egyptian *mastaba* from the neolithic grave. He cites Reisner to prove how from the simple trench grave of Predynastic times there was gradually developed a type of tomb consisting of (1) a multichambered subterranean grave, to which a stairway gave access; (2) a brick-work super-structure (*mastaba*) in the shape of four walls enclosing a mass of earth or rubble; and (3) an enclosure for offerings in front of the brick superstructure. During the period of the Pyramid-builders the mud-brick *mastaba* began to be imitated in stone. Within the masonry of the *mastaba*, but near the forecourt, is a narrow chamber, usually known by the Arabic name *Serdab*. Here is placed a statue of the deceased, sometimes also of other members of the family and servants. The statue represents the deceased and is in communication with the outside world through a hole connecting with the forecourt, or chapel. According to Elliott Smith the dolmens scattered over the world from Ireland to Japan are but crude, overgrown and degraded Egyptian *mastabas*, the one feature retained being the *serdab*, the dwelling of the spirit of the deceased.

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#### BOTANICAL NOTES

##### A NEW NATURE BOOK

WE have had many books on "agriculture" and still more on "nature study," all of which have been more or less helpful, while being at the same time more or less unsatisfactory and it has remained for Professor J. G. Needham to prepare a book which directs the attention of the pupil to both subjects in one view with what appears to be a maximum of helpfulness and a minimum of objectionable features. He calls his book "The Natural History of the Farm" (Comstock Pub. Co., Ithaca, N. Y.) and tells in his preface that it deals with "the sources of agriculture," meaning by this the

wild plants, wild animals, the virgin soil, the weather, etc., with which we deal. The idea underlying the treatment is good, and must commend itself to every scientific man. We apprehend that there will be some ultra "practical" critics who will demand more agriculture and less natural history, and yet it has been the writer's observation that just such information as is here given, such suggestions as are here made will prove to be the most helpful to the boys and girls in the country schools. Agriculture is no more all cultivation of crops, than is classical culture simply the study of Greek and Latin roots. This book breathes of the farm and of country life, of the wild things, as well as those that we have brought into our fields and stables. It is an attempt to broaden and liberalize agriculture and to bring it into relation with the things in nature. The topics of some of the chapters will show how this is done: Mother Earth, Wild Fruits of the Farm, Wild Nuts of the Farm, The Farm Stream, Pasture Plants, The Farm Wood-lot, The Wild Mammals of the Farm, The Domesticated Mammals, The Lay of the Land, Winter Activities of Wild Animals, Maple Sap and Sugar, What Goes On in the Apple Blossoms, The Clovers, Weeds of the Field, Some Insects at Work on Farm Crops, etc. Surely no boy or girl in the country could use this book without great pleasure and great profit.

##### A STUDY OF ASTERS

QUITE recently Charles E. Monroe has published in the *Bulletin* of the Wisconsin Natural History Society a paper on "The Wild Asters of Wisconsin," which is of more than the usual interest of local lists, or local discussions of groups of species. In his introduction the author makes some thoughtful suggestions as to "species" in general, and "species" of asters in particular. Thus he says

The old notion of a species, as something definite, fixed and stable, nowhere breaks down more completely than when an attempt is made to apply it to the different forms of *Aster* as we find them in this country. Different species are so connected by intermediate forms that we often feel like ignoring specific distinctions and grouping two or