

documentary evidence. It may easily be felt that judicious compression of the abundant material, so far from diminishing, would have positively enhanced the value of the work. Moreover, while a full treatment of those technical matters, which have a general character and yet find a particular application in this special subject, would have been out of place, short explanations based on first principles could sometimes have been interpolated with material advantage to the general reader. But it is as an historical work of reference that the volume now completed must be judged, and as such it will bring the author of the "Atlas Stellarum Variabilium" the renewed gratitude of all those who are interested in this branch of astronomy.

H. C. P.

The Study of Fossils.

Animals of the Past: an Account of Some of the Creatures of the Ancient World. By F. A. Lucas. Sixth and revised edition. (Handbook Series, No. 4.) Pp. xii + 207. (New York: American Museum of Natural History, 1922.) n.p.

IN 1901, when Dr. Lucas was a curator of the United States National Museum, he published a most useful popular book on the study of fossils, with special reference to the remarkable extinct vertebrate animals found in North America. A decade later, when he became director of the American Museum of Natural History, New York, he reprinted his work as one of the handbooks of that museum, where it has had a large sale. He now has issued a much-revised edition, with numerous new illustrations from fossils actually in the American Museum.

Dr. Lucas's little treatise is neither a museum guide nor a text-book, but consists of a series of gossipy chapters, each on a special subject, admirably designed to rouse an interest in the study of fossils. He explains their nature, describes how they are collected and made available for science, and leaves the reader in a frame of mind to appreciate more systematic and technical works on the subject. At the end of each chapter, indeed, he refers to some of the more important literature, besides mentioning the chief American museums in which illustrative specimens can be seen.

Among the new matter may be specially mentioned a discussion of Mr. Beebe's theory of the origin of flight in birds, a chapter on flying reptiles with some good illustrations from Seeley's "Dragons of the Air," an account of *Tyrannosaurus* and the giant Eocene bird *Diatryma*, additional figures of dinosaurs, and a photograph of the restoration of the American mastodon in the State Museum at Albany. There is also a photograph of an engraved bone found in a cave near Pineville, Missouri, in 1921, which seems

to show the rude outline of an elephant, either mammoth or mastodon.

Dr. Lucas writes, of course, primarily for American readers, and it is natural that he should place American discoveries in the front rank; but he is wrong in stating that "the largest single bone of a Dinosaur" is the thigh bone of *Brachiosaurus* at Chicago—it is three inches shorter than the humerus of the African *Gigantosaurus* at Berlin. The rivalry between the American palæontologists and their colleagues in the Old World is one of friendly emulation, which has led to great discoveries in more than one hemisphere.

A. S. W.

Our Bookshelf.

Methods and Experiments in Mental Tests. By C. A. Richardson. Pp. 94. (London, Calcutta, and Sydney: G. G. Harrap and Co., Ltd., 1922.) 3s. 6d. net.

It is difficult to perceive for what type of audience Mr. Richardson's book is intended. If it is meant for readers who have no knowledge of any of the literature on the subject, then it is surely out of place to introduce the subject by a rather perfunctory discussion of the criticisms made against the use of tests. If, on the other hand, it is meant for readers already conversant with some of the work done, then much of the discussion is useless. The same remark applies to the statistical account.

The details of the experimental testing of groups of children are very interesting, but would have been more suitable for an article in a psychological journal than for a book.

The Organisation and Administration of Physical Education. By Prof. Jesse Feiring Williams. Pp. xiii + 325. (New York: The Macmillan Company; London: Macmillan and Co., Ltd., 1922.) 9s. net.

DR. WILLIAMS urges the necessity for physical education to be placed on a scientific foundation, and gives such a basis with a wealth of detail which is rarely associated with the subject. Indeed, it is carried to an extent which, in Great Britain, is unnecessary. The chapter on health and efficiency is the least scientific; little reliance can be placed on tests involving such factors as height and weight charts, and the ratio of the girth of the arm to that of the chest. The general purpose of the book is good, and it should provide a stimulus to interest in physical education.

Character and the Unconscious: A Critical Exposition of the Psychology of Freud and of Jung. By J. H. van der Hoop. Authorised Translation by Elizabeth Trevelyan. (International Library of Psychology, Philosophy, and Scientific Method.) Pp. viii + 223. (London: Kegan Paul and Co., Ltd.; New York: Harcourt, Brace and Co., Inc., 1923.) 10s. 6d. net.

THIS is a general and rather superficial account of the theories of Freud and Jung. The author tells us it is the result of nine years' intensive study of the practice and theory of psycho-analysis, which seems to mean that he has been a practitioner during that period. The translation is well done.