

to the position of the Pelycosauria. Broili, however, in his recent memoir upon Permian Stegocephalia and Reptilia of Texas³ and elsewhere⁴ is inclined to hold to the classification of Cope and include them with the Cotylosaurs and Anomodontia in the Theromorpha (Tharomora) as quite nearly related primitive groups.

Dr. Case has shown a praiseworthy conservation in the manufacture of new species, and the tabular and descriptive differentiation of the families, genera and species full and clear. The quality of the illustration varies widely—some of the drawings are excellent—most of the photographic work is poor. The sketch restorations of the better-known genera assist greatly in making the subject clearer. The type revision leaves somewhat to be desired as to method and clearness; it would have been an aid to systematists if the author had differentiated his "types" more clearly, according to the excellent nomenclature given by Schuchert.⁵ Some of Dr. Case's "types" are holotypes, others neotypes; "co-type" means sometimes paratype, sometimes neotype, never "co-type" in the generally accepted sense of the word. Many of the original types (holotypes and paratypes) are indeterminate, or unidentifiable, and the species are either indeterminate or rest upon neotypes, but this should have been clearly stated in each case. Lack of clearness in this subject is liable to mislead systematists and compilers who might suppose it necessary to make changes in nomenclature. The reviewer, in preparing a catalogue of the types in the Cope collection, has not found this necessary.⁶

³ *Palæontographica*, Bd. LI., 1904.

⁴ "Stammreptilien," *Anatom. Anz.*, Jena, 1904, Bd. XXV., p. 577.

⁵ SCIENCE, 1897, p. 636; "Catalogue of Type Specimens in the National Museum," Bull. U. S. Nat. Mus., No. 53, part 1, preface.

⁶ *E. g.*, Case refers *Sphenacodon* Marsh to *Dimetrodon* Cope, which it antedates; and *Clepsyrops limbatus* to *Dimetrodon incisions*, a later described species. If definitely referable, this would invalidate both the genus *Dimetrodon* and the species *incisions*. But the older genus and

Altogether the memoir is a very valuable and useful contribution, and a great step forward in our knowledge of the Permian Vertebrata. As the author premises, we are by no means yet in a position to revise and describe the Pelycosauria in any final and conclusive manner. Nevertheless, his conclusions in regard to the position and relationship of the order are not likely to be very radically altered by future discoveries. It is to be hoped that the remaining groups of Permian vertebrata will be similarly studied and monographed in the near future.

Accurate stratigraphic work is also very much needed in this field. Little is known of it except through the reports of Professor Cummins in the Texas Survey, which, on account of limited time and means and the extensive field to be covered, are of a preliminary and general character and have not been satisfactorily correlated with the paleontological work and with stratigraphic work in adjoining regions. Dr. Case has recently published⁷ some preliminary data for more exact stratigraphic work, and Dr. I. C. White in his studies upon invertebrata⁸ and Dr. Broili upon the vertebrata⁹ have published some valuable stratigraphic observations upon the typical region. Dr. Geo. I. Adams¹⁰ has also made a preliminary correlation with the work of Taff¹¹ and Gould¹² in Oklahoma. But much more remains to be done before we can arrive at any adequate understanding of the faunal levels in the formation and the evolution of the various phyla during the period.

W. D. MATTHEW

Mental Pathology and Normal Psychology.

By GUSTAV STÖRRING. Translated by THOMAS LOVEDAY. Pp. 298. Swan Sonnenschein and Co. 1908.

In spite of the very general and increasing species are in fact regarded as indeterminate and should have been so placed in the synonymy.

⁷ *Bull. A. M. N. H.*, 1907.

⁸ *Amer. Nat.*, 1889.

⁹ *Palæontographica*, 1904, Bd. LI.

¹⁰ *Bull. Geol. Soc. Am.*, 1903, 191.

¹¹ U. S. G. S., Professional Paper No. 31, 1904.

¹² U. S. G. S., Water Supply and Irrigation Paper No. 148, 1905.

ing interest in the topic of abnormal psychology, there have been practically no summaries of doctrine suitable to the use of students approaching this topic from the psychological point of view. The literature is a medical one, appealing to the alienist; and from this the psychologist has had to gather his material and make his interpretations. The appearance of Dr. Störing's lectures to students at Leipzig was one of the first attempts to bring within reasonable compass some of the aspects of this topic that would be pertinent to students with predominant psychologic interests. It was natural that a contribution of this kind should attract the translator; and the English edition of the work will be welcomed as a valuable resource to professional teachers of psychology. The work quite naturally does not meet the needs of American students as nicely as would a book written with reference to the attainments of the advanced undergraduate and the graduate student in our universities. The attitude of the German lecturer and the mode of handling his data, as well as the maturity of apprehension and general familiarity which he assumes, often go beyond what may properly be expected in an American class-room. As a text the volume will be used *faute de mieux*; but as a book of reference upon the shelves of even a limited psychological library the book merits a well-deserved place. The selection of topics is well considered and the perspective of importance of the data well maintained. There are not that clearness of description and patient exposition of relation which students often expect and which the American lecturer takes such pains to supply. The delineation of symptoms as deviations of mental procedure is given first prominence, though the place of these in actual complexes (disease pictures) is not slighted. Special psychic disorders (notably the delusions and hallucinations, the aphasias, the phobias and functional aberrations) are likewise succinctly presented. The translation is commendable. J. J.

Attention. By W. B. PILLSBURY. Macmillan. 1908. (Library of Philosophy.) Pp. 346. Professor Pillsbury's monograph on "At-

tention" appeared in French as a volume of the Library of Experimental Psychology. The valuable character of the work was commented upon in a review of the French edition. The English volume is an expansion of the former work and increases notably the value of this contribution to psychology. There is an additional chapter on measurements of the attention, a very important topic; a similar addition treating of the relation of attention to the feelings and to the self, and a useful practical chapter upon the educational aspects of attention. What appeared as a single chapter in the earlier publication on memory, will and reason, is now amplified into three separate chapters. With these additions, the work becomes a complete and admirable handbook to a well-rounded treatment of a topic of prime importance to the student of psychology. Naturally the topic is so central to the group of problems that constitute modern psychology that the work touches upon many of the vital issues of a growing science, and summarizes a body of doctrine indispensable to the right understanding of what mental processes are. The point of view of the author remains unchanged and takes a conciliatory stand with reference to the conflicting views of the nature of the attentive process as hitherto presented. The volume may be emphatically commended.

J. J.

SCIENTIFIC JOURNALS AND ARTICLES

The American Naturalist for March has an article by Bashford Dean on "The Lamarck Manuscript in Harvard" which comprises five papers and nineteen plates. Douglas H. Campbell discusses "Symbiosis in Fern Prothallia" and Charles Depéret presents the second paper on "The Evolution of the Tertiary Mammals and the Importance of their Migrations," this paper dealing with the evidence in the Oligocene of France. Henry L. Bolley has some "Observations regarding the Constancy of Mutants and Questions regarding the Origin of Disease Resistance in Plants" and S. W. Williston discusses "What is a Species," giving a new and elaborate defini-