

analysis appear to be no better than the one first mentioned.

While in our judgment Mr. Richardson's committee is all wrong, and will ultimately be admitted to be so, it is hardly to be expected that Mr. Eckel would do otherwise than he has; nevertheless the book, addressed as it is mainly to those who *use* cements, limes and plasters, while well-nigh complete in other respects, is deficient in respect to furnishing a method of chemical analysis that will give results that enable one to distinguish good cements from bad cements.

We congratulate those seeking information upon this interesting subject that Mr. Eckel has given them such a comprehensive and valuable work.

*A Treatise on Concrete, plain and reinforced; materials, construction and design of concrete and reinforced concrete.* With chapters by R. FERET, WILLIAM B. FULLER, SPENCER B. NEWBERRY. By FREDERICK W. TAYLOR, M.E., and SANFORD E. THOMPSON, S.B., Assoc. M. Am. Soc. C. E. New York, John Wiley & Sons. 1905.

The preface of this work states: "This treatise is designed for practising engineers and contractors, and also for a text and reference book on concrete for engineering students."

As hydraulic cement is the basis of all concrete structures, this announcement exhibits the book as designed to inform and instruct those who *use* cement. While many of the technical and engineering problems involved in the use of cement in mortar and concrete are of interest to us, we naturally turned to those portions of the book devoted to the chemistry of cements and cement mortars. A careful examination of the book reveals an exceedingly interesting chapter by Mr. Spencer B. Newberry (a very successful manufacturer of Portland cement), on the 'Chemistry of Hydraulic Cements.' We found nothing in this chapter especially designed to instruct the *users* of cement. We looked in vain through the body of the work for anything concerning the analytical examination of cements, cement mortars and concretes. In an appendix we

found the 'method suggested for the analysis of limestones, raw mixtures and Portland cements, by the committee on uniformity in technical analysis of the American Chemical Society, with the advice of W. F. Hillebrand.' As a method of ultimate analysis of the substances named the method proposed is well-nigh perfect; but for any purpose associated with the technical composition of cements, cement mortars and concretes, it has no value whatever.

The authors of this book are not chemists, hence they may be excused for any defects in the book involving a purely chemical problem; nevertheless, with all the good qualities the book possesses it is a defect that the book does not contain a scheme of chemical analysis by means of which good cements can be distinguished from bad cements and also by means of which the analyses of cements and cement mortars and concretes may be correlated with one another and with the physical tests of the cements used. We believe the time is not far distant when those who *use* cement will be brought to realize the supreme importance of such a method.

S. F. PECKHAM.

*Technique de psychologie expérimentale* (Examen des sujets). In Toulouse's 'Bibliothèque internationale de psychologie expérimentale.' Toulouse, Vachide et Piéron. Paris, O. Doin. 1904. Pp. 335.

The scope of this work is much more limited than the first title would indicate; the subtitle indicates more exactly the ground covered; yet the scope is still narrower than this at first suggests. The book does not, of course, attempt to condense into one small volume the whole subject of experimental technique in psychology; it limits itself definitely to the technique of 'tests,' by which the mental traits of individuals are measured. But, further, the book makes no attempt to cover the already rather extensive literature of mental tests; it scarcely refers at all to other authors. Its sole and consistent purpose—a purpose which has guided the authors in several years of experimentation, of which this book presents the outcome—is to formulate a system of mental tests which shall take

rank as the standard tests, and so introduce order into the existing confusion, and make the future results of different workers in this field comparable with one another. The principal difficulty to which the authors address themselves is the selection of materials and conditions which can be described with such scientific precision as to be reproducible from the mere description by any other worker. For example, in a specially difficult test to standardize, that for sensitiveness to faint colors, the authors use aqueous solutions of analin dyes; light passes through the solutions, under definite conditions, to the subject's eye, and his sensitiveness is measured by the strength of the weakest solution in which he detects the color. This seems, on the whole, the most ingenious of the authors' innovations, of which there are many. In addition to determinations of the least noticeable sensations and differences in sensation, the authors suggest a system of tests on memory, association, imagination, judgment, reasoning, attention, etc. They frankly point out the gaps in their system, which they are as yet unable to fill satisfactorily. A chapter is devoted to the general technique of experimentation, the necessity of noting the condition of the subject, and of excluding certain subjects as unsuited to psychological tests, the proper attitude toward working hypotheses and toward the literature of a question, the necessity, in addition to quantitative tests, of less rigorous observation, which should, however, be brought up as nearly as possible to the exact standard of experimentation. An appendix of sixty pages is devoted to the reprinting of tests which can be fully presented in alphabetical or musical notation.

In view of the slack attention to standard conditions that characterizes much work in psychology, this book should do considerable good. As the most serious attempt to present a standard series of tests, it is worthy of attention and a large measure of acceptance. It can not hope, of course, to be definitive, and, indeed, the authors repudiate any such claim. More is to be gained, perhaps, by insistence on the general principle of standard and exactly reproducible conditions, than by

the conformity of all workers in the field to any one set of tests.

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#### SCIENTIFIC JOURNALS AND ARTICLES.

THE first number of *Economic Geology*, a semi-quarterly journal devoted to geology as applied to mining and allied industries has been issued under the editorship of John Duer Irving, of Lehigh University. The associate editors are: Waldemar Lindgren, Washington, D. C.; James Furman Kemp, Columbia University; Frederick Leslie Ransome, Washington, D. C.; Heinrich Ries, Cornell University; Marius R. Campbell, Washington, D. C., and Charles Kenneth Leith, University of Wisconsin. The contents of the first number are: 'The Present Standing of Applied Geology,' Frederick Leslie Ransome; 'Secondary Enrichment in Ore-Deposits of Copper,' James Furman Kemp; 'Hypothesis to Account for the Transformation of Vegetable Matter into the Different Varieties of Coal,' Marius R. Campbell; 'Ore-Deposition and Deep Mining,' Waldemar Lindgren; 'Genesis of the Lake Superior Iron Ores,' Charles Kenneth Leith; 'The Chemistry of Ore-Deposition—Precipitation of Copper by Natural Silicates,' Eugene C. Sullivan; Editorial; Discussion; Reviews; Recent Literature on Economic Geology; Scientific Notes and News.

*The American Museum Journal* for October is termed the Batrachian Number, its major portion being devoted to an illustrated synopsis of the salamanders, toads and frogs that have been found within a radius of fifty miles of New York City. The text is by R. L. Ditmars, illustrations from photographs by Herbert Lang, mainly of animals living in the New York Zoological Park. W. M. Wheeler tells 'How the Queens of the Parasitic and Slave-making Ants establish their Colonies,' and announcements are made of three courses of lectures, for members, pupils and teachers, in October–December. There are, besides, many notes concerning additions to the collections and other features of interest at the museum. The figures of the batrachians are