disprove that should be the condition of all of the earth's elements toward the center. The study of seismic vibrations will probably settle this question. A. C. LANE

Modern Chemistry, Theoretical and Systematic. By SIR WILLIAM RAMSAY. 12mo, pp. 327. New York, The Macmillan Co. 1907. Price, 70 cents.

Sir William Ramsay's epitome of modern chemistry, issued originally by Dent as two volumes of his dainty series of Temple Encyclopedic Primers, can not fail to find many new readers in the present one-volume form. Chemists should not need to be told of its merits, but if there be any who have overlooked the book they can only be envied for the treat which its perusal has in store for them. Students of other sciences will find in the book that for which many of them have been looking. They will find an account of the science, in which the chief results of modern physicochemical work are not only described, but are so incorporated into the chemistry of our school days that the nature of the debt of the latter to physical chemistry is plainly visible. The book fulfills its purpose singularly well, for it is brief, yet admirably clear and readable. To bring the present edition up to date a few minor changes only were required. The chief of these seems to have been the addition of a paragraph on the radium emanation.

ALEXANDER SMITH
THE UNIVERSITY OF CHICAGO

Selection and Cross-breeding in Relation to the Inheritance of Coat-pigments and Coat-patterns in Rats and Guinea Pigs. By H. MACCURDY and W. E. CASTLE. Carnegie Institution of Washington, Publication No. 70, May, 1907.

The authors publish some important data concerning the heredity of the spotted coat in rats and in guinea pigs. They confirm the conclusion of previous observers that the uniform or self color is dominant to the spotted coat and the latter to the albino. Two types of spotted rats were used, the Irish, with white on the ventral side, only; and the hooded, with black head and rump and a dorsal black stripe—the remainder of the body being white. Both of these types the authors call partial albinos, although the spotted condition appears to be a different "unit-character" from that of the albino. In other words, the albino is the allelomorph of the spotted coat and not a graded condition of the latter as the term partial albino might seem to indicate, although the authors recognize the distinction just given. It has not been found possible to produce an albino by selection or otherwise from the spotted coat.

Within the range of the spotted coat the authors find that it is possible by selection to produce races that breed approximately true to any special degree of spottedness. They argue from this that selection of a continuous or fluctuating variation may produce fixed types within the limits of the variation. They contend, therefore, that their results are opposed to the conclusion of de Vries that fixation of fluctuating variations by means of selection can not take place. But do the results really establish this point. May not there be several or even many semi-stable states of the spotted coat that ordinarily overlap, *i. e.*, may there not be within the limits of apparent fluctuation certain individuals that reproduce the parent type? A comparison with Lang's results on snails and of Tower's on the potato beetle would have been a welcome addition to the paper in this connection. However this may turn out in the end—and there is clearly something peculiar in the inheritance of spotted types that does not conform to the idea of unit characters—the authors' data are a valuable contribution to the subject.

The attempt of the authors to fix certain color patterns in guinea-pigs—nose spots or head spots, or Dutch marked individuals, gave a negative result—a fact already familiar to practical breeders. The experiments led, however, also to a positive conclusion of no little interest. It was found from the study of 1,048 guinea pigs "that one can, by selection, either increase or decrease the extent of the pigmented areas, but it is impossible by selection to fix this pigmentation in a particular pattern, retaining pigment areas on