

of such primal elements will not only aid in the mastery of efficiency in a given field, but will prevent this important idea from assuming a narrow meaning and thus leading to limited or even harmful results. In the preface he explains that the leading ideas here presented were suggested by the study of Spencer twenty years before. This basis has been supplemented by careful perusal of the publications of the Efficiency Society and of leading writers along these lines. Groups of exercises have been inserted after each chapter so that the book is well equipped as a text-book for efficiency courses. This purpose is further served by the careful subdivision of chapters. Something of the scope of the work can be indicated by the topics of the chapters as follows: Definition and First Principles; Reuse; The Unit and Its Multiples; The Group; Multiplicative Groups; Orders of Material; Externality; Uniformity and Diversity; Expenditures and Results; Symbolism; Directive; Kinematic and Dynamic; Rhythm; Dialectic; Limitation; Error and Paradox; Combinations of Efficients-Summary; Applications.

A commentary on current typographical tendencies is furnished by the frequent appearance of the word "Reuse" printed without a hyphen. The word is perfectly good, and our modern rules would dispense with the hyphen, but the word is not in such general use but that its appearance without context as the title of the chapter and in such headings as "Marginal Reuse," "Negative Reuse," "Special forms of Reuse," etc., proves puzzling to the general reader. K

NOTES.

It will be of great interest to scientists and students of physics everywhere to learn that just before his death last February, Prof. Ernst Mach had completed a manuscript on the "Principles of the Theory of Light" upon which he had been at work almost to the very last days of his life. This treatise on Light will form a companion volume to his previous works on *Mechanics* (English translation by T. J. McCormack, Chicago, Open Court Publishing Company, 1902) and the *Theory of Heat*, an English translation of which is now on the press with the same publishers. Like these earlier works Professor Mach's last book will present the development of principles from a critical point of view and by the historical method. The *Prinzipien der Lichtlehre* will appear during 1916 from the press of Johann Ambrosius Barth of Leipsic.