

SHORTER NOTICES.

Elementary Calculus. By PERCY F. SMITH, Ph.D. New York, American Book Company, 1902, 1903. 8vo, 99 pp.

THE appearance of a new text book on elementary calculus is not a rare occurrence, but the first satisfactory answer to a definite question is always worthy of notice. In many technical schools students not in engineering courses are given an elementary course on the calculus, consisting of from thirty-five to fifty exercises. To make any "short course" successful is at best a difficult problem, and almost impossible of solution without a special text-book which can be completed in the allotted time. Otherwise the subject must be presented by lectures or by extracts from a larger text. Now a first or second year student wants the book, the whole book, and nothing but the book. Lectures on points not covered by the text are almost sure to be received with indifference, while whatever is in the book is accepted without question. If the course is given from a larger text the average student would be able to prove special theorems, solve problems, if he could guess under what case they occur, but would very probably lack any general idea of the subject.

In preparing a book to fill this want Professor Smith has written a true introduction to the fundamental ideas of the calculus. In case a rigorous proof would be beyond the scope of the book it is made clear that the explanation given is to illustrate the meaning of the theorem.

To the original five chapters of the book there has been added in the new edition another chapter of examples. The examples throughout are very well chosen, and the derivation of the derivatives and integrals of the elementary functions clearly given. The main interest centers in the introduction of the fundamental notions of the calculus—function, limiting value of a function, continuity, derivative and integral. In the definition of function and the exercises following, the idea is brought out that a function may be defined by an analytic law for some values of the independent variable and not for all; this point is usually omitted in elementary text books, and the omission is sadly felt when indeterminate forms are taken up.