

independent variable; the absolute rate is obtained when  $t$  is taken as the independent variable; and finite values having the rates for their ratio are next assigned to  $dx$  and  $dy$ ; I quote here in part from the preface.

The following chapter headings with the number of pages given to each show the emphasis placed on the several subjects: Functions, derivatives, and differentials, 43; Successive derivatives, 15; Maxima and minima, 17; Evaluation of indeterminate forms, 18; Development of functions in series, 29; Application to plane curves, 52; Functions of two or more variables, 14. From this it will be plainly seen that the evaluation of indeterminate forms and the applications to plane curves certainly receive more attention than is warranted; especially in view of the fact that indeterminate forms to be evaluated by calculus methods arise but rarely in practice and are more or less "cooked up" to suit the occasion. It is doubtful, too, if an elementary calculus is the proper place for a detailed study of the derivation of the equations and properties of the exhaustive list of higher plane curves here studied, even though these have become household words among geometers.

In the abridgment space might well have been saved by omitting entirely the brief references to pedal curves and intrinsic equations. In its place it would be possible to treat more fully such a subject as the radius of curvature, which latter seems almost lost to view.

The problems, with answers, following the several sections are of a type suitable for an elementary text in that they do not seem to be of the kind where the principles of the calculus are lost sight of in the maze of reductions involved in arriving at the answers. If any criticism were to be made, it would surely be to the effect that the answers too often "come out easy" instead of "correct to so many decimal places," a point to be considered since actual problems in the application of the calculus naturally come out in decimals.

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*Hyperbolic Functions.* Smithsonian mathematical tables. By GEORGE F. BECKER and C. E. VAN ORSTRAND. Washington, Smithsonian Institution, 1909. 8vo. li + 321 pp. \$4.50.

THIS volume constitutes the fourth in the set of tables for scientific investigation published by the Smithsonian Institu-