

EDWARDS' DIFFERENTIAL CALCULUS.

An Elementary Treatise on the Differential Calculus, with applications and numerous examples. By JOSEPH EDWARDS, M.A., formerly Fellow of Sidney Sussex College, Cambridge. Second edition, revised and enlarged. London and New York, Macmillan & Co. 1892. 8vo, pp. xiii + 521.

WHEN a mathematical text book reaches a second edition, so much enlarged as this, we know at once that the book has been received with some favour, and we are prepared to find that it has many merits. We are at once struck by Mr. Edwards' lucid and incisive style; his expositions are singularly clear, his words well chosen, his sentences well balanced. In the text of the book we meet with various useful results, notably in the chapter on "some well known curves," and moreover the arrangement is such that these results are easy to find; and in addition to these, numbers of theorems are given among the examples, and, this being a feature for which we are specially grateful, in nearly every case the authority is cited. Recognizing these merits, however, we notice that the book has many defects, some proper to itself, some characteristic of its species; and just because it is so attractive in appearance, it seems worth while examining it in detail, and pointing out certain specially vicious features.

A book of this size may fairly be required to serve as a preparation for the function theory; at all events, the influence of recent Continental researches should be evident to the eyes of the discerning. Mr. Edwards' preface strengthens this reasonable expectation, for he promises us "as succinct an account as possible of the most important results and methods which are up to the present time known." But we soon find that the "important results and methods" are those of the Mathematical Tripos; and in our disappointment we utter a fervent wish that instead of the "large number of university and college examination papers, set in Oxford, Cambridge, London, and elsewhere," Mr. Edwards had consulted an equally large number of mathematical memoirs published, principally, elsewhere. The Mathematical Tripos for any given year is not intended for a *Jahrbuch* of the progress of mathematics during the past year; and as long as so many will insist on regarding it in that light, text books of this type will continue to be published.

Nothing in this book indicates that Mr. Edwards is familiar with such works as Stolz's *Allgemeine Arithmetik*, Dini's *Fondamenti per la teorica delle funzioni di variabili reali*, or Tannery's *Théorie des fonctions d'une variable*. In support of our contention we may instance the definitions of function,