The book as a whole is carefully planned and well written; it broadens the student's point of view, stimulates his interest in the subject, and gives him no false notions which he will have to unlearn later. In the opinion of the reviewer it will prove itself very helpful, not only to the class of students for whom it was especially prepared, but also to teachers who are engaged in this field of work; it is especially to be commended to the attention of mathematics teachers in our own secondary schools.

Besides a few obvious misprints which have been detected in reading the book (on pages 92, 116, 120, 124, 126, 149, 152, 181, 189 and 194), the following minor criticisms may be mentioned: (1) The mechanical make-up of the book would be greatly improved by emphasizing the sectional divisions. This could be done by appropriate headings, in heavy-faced type perhaps, or by merely spacing between consecutive sections. As it now stands it requires a real effort to find the beginning of a section to which subsequent reference may have been made. (2) Of all the topics that such a book as this should contain, from the point of view of either of the two classes of students for whom it was written, it would seem that one of the most appropriate would be a detailed presentation of mathematical induction; yet although this method of proof is employed in the book, its essential character as a distinct type of mathematical reasoning is not brought out. Neither is the theorem of undetermined coefficients proved, though it also is freely used. (3) In connection with Cardan's solution of the cubic equation it is carefully pointed out that although the expressions for the roots involve imaginary elements, when all the roots are real and unequal, yet these imaginary parts cancel each other. It is a pity that the author did not go a step farther right here and show that the actual calculation of the α or β which is involved in these roots would itself require the solution of a cubic equation all of whose roots are real and unequal, and so explain why this is usually called the "irreducible case."

J. H. TANNER.

A First Course in Infinitesimal Analysis. By DANIEL A. MURRAY. Longmans, Green & Co., New York, London and Bombay, 1903. xvii + 439 pp.

IN common with Professor Murray's other books, this one contains numerous historical notes and references for collateral