may learn a good deal about the properties of algebraic curves, so that in this respect the publication of a new English treatise on curves is not without value, and deserves commendation.

ARNOLD EMCH.

Nouvelles Méthodes de Résolution des Equations du 3e Degré. By le VTE. DE GALEMBERT. Paris, Vuibert, 1919. 22 pp.

This pamphlet gives a method for rapid numerical calculation of the real roots of the cubic equation

$$x^3 + Ax^2 + Bx + C = 0,$$

new as far as I am aware, for the case in which there are three real roots. The equation is reduced to the form $z^3 - 3z = y$; the latter equation has three real roots if $|y| \leqq 2$. A table of corresponding values of z and y is computed once for all, by means of which the values of z may be found accurately to two decimals, whenever y is known to six places. An additional table gives z and y in terms of x, A, B and C, for the different combinations of signs which the coefficients may have in the general equation. The actual calculation of the roots is very much simplified in this way.

A. DRESDEN.

The Integral Calculus. By JAMES BALLANTYNE. Boston, Published by the author, 1919. 41 pp.

THE subtitle of this small book is sufficiently descriptive of its scope. It reads, "On the integration of the powers of transcendental functions, new methods and theorems, calculation of Bernouillian numbers, rectification of the logarithmic curve, integration of logarithmic binomials, etc."

The author has several new series expansions of transcendental functions; but does not burden his tale with arguments as to the rigor of his methods or the general validity of his formal results. The book gives the impression of having been written for the fun of it, by a very ingenious gentleman, who was having a fine time giving free rein to his analytical processes and going gladly wherever those steeds—dangerous if unchecked—might lead him.

The style of the text may be indicated by such expressions of olden time flavor as, "integrals of even powers of sin xdx to radius 1"; "the value of C is the area of the full quadrant