in Professor Halsted's Elementary Treatise on Mensuration, 1881.* Judging by the preface to the fourth edition of this work and by its denomination as "*New* prismoidal formula" it would appear that the author believed the result to originate with himself.

The historical note on $\pi$ (pages 151–2) needs to be revised. Ludolf van Ceulen indicated the equivalent of the number $\pi$ to 35 decimal places not 30.† Vega gave only 136 decimal places correctly, not 140.‡

Except for the lack of an index the French is a great improvement on the English edition. Apart from the figures (e. g., 58, 63, 91, 108, 113 are by no means up to the usual standard set by Gauthier-Villars) the pages are exceedingly attractive and it is to be hoped that a third English edition introducing still further improvements may not be long delayed. The work is full of interest and deals with a discussion of fundamentals in geometry, in an attractive style; and there can be little doubt that the number of universities using Professor Halsted's text in connection with courses on the Foundations of Geometry, will steadily increase.

The Japanese edition of the Rational Geometry which Sommerville lists§ as published in 1911 has not yet (in May, 1912) appeared.

R. C. ARCHIBALD.

*Elementary Analysis.* By P. F. SMITH and W. A. GRANVILLE. Boston, Ginn and Company, 1910. x + 223 pp.

THE number of textbooks in analytic geometry and calculus is rapidly increasing. But nearly all are intended for the use of students in engineering or for students who intend to specialize in pure or applied mathematics. In view, however, of the recent remarkable development of the natural sciences along mathematical lines, a brief course in analytic geometry and calculus is desirable for the general student who takes one year of mathematics as an elective beyond

*Zeitschrift für Mathematik und Physik*, vol. 23 (1878), p. 413 (dated Mai, 1877).—T. Sinram, *Archiv der Mathematik und Physik* (Grunert), vol. 63, p. 443 (November, 1878).

* Page 130.

† Bierens de Haan, *Messenger of Math.*, vol. 3 (1874), p. 25; copy of inscription on van Ceulen's tombstone.

‡ G. Vega, Thesaurus Logarithmorum, Leipzig, 1794, p. 633, and W. Shanks, Contributions to Mathematics, London, 1853, p. 86.

§ Bibliography of Non-Enclidean Geometry, 1911.