

THE NAME "DIVERGENT" SERIES

BY F. CAJORI

James Gregory is rightly credited with the introduction of the name "convergent" series. According to Reiff,* whom I have followed on this matter in my writings, Gregory also introduced the name "divergent" series. When a few years ago a correspondent raised the question whether Gregory really did use the word "divergent," I was not able to answer definitely because I could not secure access to a copy of Gregory's *Vera Circuli et Hyperbolae Quadratura*, in which the term occurs, according to Reiff. At last, I have found and examined a copy (Patavia, 1668), in the Naval Observatory at Washington, D. C.; the phrase "divergent series" does *not* occur in it, nor in Gregory's *Geometriae Pars Universalis* (Patavia, 1668), although in the *Vera Circuli, etc.*, "convergent" is used in the form of an adjective, verb, or noun over a hundred times. This term did not meet with immediate acceptance, for in 1705 † and again in 1713 ‡ Leibniz used the words "advergens," "advergentia" to signify convergent and convergence. These words did not cling to the mathematical phraseology. As regards the term "divergent," it was Nicolaus Bernoulli § who in 1713 first used "divergens" and "divergentia seriei," as is correctly stated in Cantor || and in the *ENCYCLOPÉDIE*. ¶

THE UNIVERSITY OF CALIFORNIA.

* R. Reiff, *Geschichte der Unendlichen Reihen*, Tübingen, 1889, p. 16.† Leibniz's letter to J. Hermann, of April 7, 1705. See *Leibnizens Mathematische Schriften* (Ed. C. I. Gerhardt), vol. IV, p. 272. See also *BIBLIOTHECA MATHEMATICA*, (3), vol. 5 (1904), p. 308.‡ Leibniz's letter to Nicolaus Bernoulli, of June 28, 1713. See *Leibnizens Mathematische Schriften*, vol. III, p. 985.§ Nicolaus Bernoulli's letter to Leibniz, April 7, 1713. See *Leibnizens Mathematische Schriften*, vol. III, p. 983.|| M. Cantor, *Vorlesungen über Geschichte der Mathematik*, vol. III (2d ed.), p. 369.¶ *ENCYCLOPÉDIE*, vol. 1, 1907, p. 184, note 199.