Halsted, George Bruce | Encyclopedia.com

(*b*. Newark, New Jersey, 23 November 1853; *d*. New York, N. Y., 16 March 1922)

mathematics education.

Halsted's father, Oliver Spencer Halsted, Jr., was a distinguished lawyer; his mother, Adela Meeker, was the only daughter of a wealthy Charleston, South Carolina, family. Halsted was the fourth generation of his family to attend Princeton, where he received his A.B. in 1875 and his A.M. in 1878. During this period he also attended the Columbia School of Mines.

He received his Ph.D. from Johns Hopkins University in 1879, where he was the first student of J. J. Sylvester. He also studied in Berlin, where he arrived with a flattering letter from Sylvester introducing him to the distinguished Carl Borchardt, then editor of *Crelle's Journal*. From 1879 to 1881 Halsted was tutor at Princeton, and from 1881 to 1894 he was instructor there in postgraduate mathematics. His most productive period occurred from 1894 to 1903, when he held the chair of pure and applied mathematics at the University of Texas. His academic career continued at St. John's College, Annapolis, Maryland (1903); Kenyon College, Gambier, Ohio (1903–1906); and Colorado State College of Education, Greeley (1906–1914). Halsted was married to Margaret Swearingen; they had three sons.

In a period when American mathematics had few distinguished names, the eccentric and sometimes spectacular Halsted established himself as an internationally known scholar, creative teacher, and promoter and popularizer of mathematics. He was a member of and active participant in the major mathematical societies of the United States, England, Italy, Spain, France, Germany, and Russia. His activities penetrated deeply in three main fields: translations and commentaries on the works of Nikolai Lobachevski, János Bolyai, Girolamo Saccheri, and Henri Poincaré; studies in the foundations of geometry; and criticisms of the slipshod presentations of the mathematical textbooks of his day.

Upon his retirement in Greeley, Halsted wrote somewhat bitterly: "I am working as an electrician, as there is nothing [for me] in cultivating vacant lots" ("Princeton University Biographical Questionnaire") His withdrawal was not complete, however, for his annotated translation of Saccheri's *Euclides vindicatus* was published in 1920; and at the time of his death he was working on a translation of Saccheri's *Logica demonstrativa* from what he believed to be the only extant copy.

BIBLIOGRAPHY

I. Original Works. No complete bibliography of Halsted's publications has been published. The most extensive appears to be in Poggendorff, III, 578; IV 573–574; and V, 490. In *American Mathematical Monthly* alone he published over fifty articles, of which twenty were biographical sketches. His main works are the following:

"Bibliography of Hyper-Space and Non-Euclidean Geometry," in *American Journal of Mathematics*, **1** (1878), 261–276, 384–385, and **2** (1879), 65–70; *Basis for a Dual Logic* (Baltimore, 1879), his doctoral diss.; *Mensuration, Metrical Geometry* (Boston, 1881), the unacknowledged source for W. Thomson's article "Mensuration" in the 9th ed. of *Encyclopaedia Britannica* and also the work in which his "prismodial formula" first appeared (4th ed., 1889, p. 130)—Halsted was unduly proud of this contribution to mensuration; also presented in "Two-Term Prismoidal Formula," in *Scientiae baccalaureus*, **1** (1891), 169–178; and *Rational Geometry* (New York, 1904), an attempt to write an elementary geometry text based on David Hilbert's axioms which, after much criticism, was revised (1907) and later translated into French, German, and Japanese.

Halsted's translations include J. Bolyai, *The Science Absolute of Space*, trans. from Latin (Austin, Texas, 1896); H. Poincaré, *The Foundations of Science*, with a special pref. by Poincaré and an intro. by Josiah Royce (New York, 1913); N. Lobachevski, *The Theory of Parallels* (La Salle, Ill., 1914); and Girolamo Saccheri's *Euclides vindicatus*, also ed. by Halsted (Chicago, 1920), portions of which also appeared in *American Mathematical Monthly*, **1–5** (June 1894-Dec. 1898).

II. Secondary Literature. L. E. Dickson, "Biography. Dr. George Bruce Halsted," in *American Mathematical Monthly*, **1** (1894), 337–340, contains a good deal of the family history and some personal observations. See also A. M. Humphreys, "George Bruce Halsted," in *Science*, **56** (1921), 160–161; F. Cajori, "George Bruce Halsted," in *American Mathematical Monthly*, **29** (1922), 338–340; and H. Y. Benedict, "George Bruce Halsted," in *Alcalde*, **10** (1922), 1357–1359, a notice that is mainly anecdotal.

"[Princeton University](#) Biographical Questionnaire," which was filled out by Halsted personally, contains details not available elsewhere.

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