MERRILL, Helen A. March 30, 1864–May 2, 1949.
Wellesley College (BA 1886), Yale University (PhD 1903).

Helen Abbot Merrill was born in Orange, New Jersey, the fifth of seven children of Emily Dodge (Abbot) (1830–1889) and George Merrill (b. 1827). Both of her parents were born in Massachusetts, her mother in Ipswich and her father in Newburyport; they married in Brooklyn in 1851. Her first American paternal ancestor had arrived from England in 1633. Her father graduated from high school and was in the life insurance business, first in Newburyport and later in New Brunswick, New Jersey. In 1860 he was a merchant, in 1870 a dry goods merchant, and in 1880 a grain merchant. In 1958 he was described as having been an importer, insurance auditor, and inventor. The other children in the family were: Mary Elizabeth (b. 1852), George Francis (1857–1858), Francis Gordon (b. 1859), Emily Dodge (b. 1861), William Pierson (1867–1954), and Robert Dodge (b. 1871). The three sons who survived to adulthood all graduated from theological seminary.

Merrill attended public schools in Newburyport and in New Brunswick. She took the classical course as an undergraduate at Wellesley with her main subjects being mathematics, Greek, Latin, science, and history. At the time she was at Wellesley, at the end of its first decade and start of its second, the mathematics department had a full four-year curriculum, which was considered one of the strongest in the college, and the department head was Helen Schafer, who was soon to become the third president of the college.

Helen Merrill graduated from Wellesley in 1886, the same year as Ellen Pendelton, who was to become a colleague in the mathematics department and Wellesley's sixth president. That same year Winifred Edgerton (Merrill), Wellesley class of 1883, became the first woman in the United States to be granted a PhD in mathematics. After her graduation, Helen Merrill taught at the Classical School for Girls in New York City 1886–89 and at Walnut Lane School in Germantown, Pennsylvania, 1891–93. As a volunteer, she taught mill girls for the Dutch Reformed Church in New Brunswick in the years 1889–91.

Merrill began her long tenure as a faculty member at Wellesley College in 1893. During her first year teaching she also studied mathematics at Wellesley. She was an instructor during the period 1893–1901 except for the year 1896–97, when she was a graduate student at the University of Chicago. Her sister Emily Dodge Merrill attended Wellesley as a special student 1895–97. Helen Merrill was promoted to associate professor in 1901 but had a leave of absence from the college for study at Göttingen and for travel in England and Italy during the year 1901–02 and for study at Yale during the academic year 1902–03. While an associate professor, she was elected an alumna member of Phi Beta Kappa from Wellesley.

In a letter of August 3, 1902, to Professor Andrew Phillips of Yale, whom she had met two years earlier, she wrote, "I expect to come to Yale University this fall for work in Mathematics. There will, I suppose be no formalities necessary for my admission, as I am a member of the Mathematics Department of Wellesley College" (Graduate School of Arts and Sciences, Yale University, Student Records (RU 262), Manuscripts and Archives, Yale University Library). During that year she had courses with James Pierpont in the advanced theory of functions and with E. R. Hedrick and H. E. Hawkes in partial differential equations. Although there appears to be no official record of Merrill's advisor, her name appears on the partial

list of students of James Pierpont in his obituary in the *Bulletin* of the AMS. The committee that examined and approved her thesis and record at Yale and that recommended her for the PhD consisted of P. F. Smith, J. P. Pierpont, and M. B. Porter, with Pierpont signing for Porter who was then at the University of Texas. Merrill's dissertation in analysis concerning solutions of certain types of differential equations extends earlier results of Porter, who had earned a PhD at Harvard in 1897 and had been an instructor at Yale 1899–1902. Merrill received her PhD in 1903, and Porter sponsored the presentation of her dissertation results at the 1903 summer meeting in Cambridge, Massachusetts.

During the rest of her career at Wellesley, Merrill was associate professor 1901–15, professor 1915–31, Lewis Atterbury Stimson professor 1931–32, and professor emeritus 1932–49. She was chairman of the department from 1916 until her retirement in 1932. She had a leave of absence in 1914–15 for the Napier Conference in Edinburgh and for travel in Great Britain, Canada, and the United States; she also attended a summer session at the University of California in 1915. In 1922–23 she had another leave for work in English university libraries and for travel in France and Italy.

While on the faculty at Wellesley, Merrill was engaged in many professional and writing activities. She joined the AMS in October 1903 and was listed in the January 1, 1904, membership list as a life member. She was a particularly active member of the MAA, which she joined as a charter member in 1916 along with six of her Wellesley colleagues. She was an associate editor of the *American Mathematical Monthly* 1916–19, served on the executive council 1917–19, and was vice president in 1920, the year the executive council became the board of trustees. Her publications include a textbook, *A First Course in Higher Algebra*, coauthored with her colleague Clara E. Smith, published in 1917. Merrill also wrote mathematical poetry and songs, some of which appeared in the *Mathematics Teacher*. Her highly acclaimed book, *Mathematical Excursions*, often used as a source for mathematics club presentations, was published in 1933 and was reprinted by Dover Publications in 1958. In 1944, a dozen years after her retirement, she presented to the department "A History of The Department of Mathematics, Wellesley College, from the opening of the College in 1875"; it is currently in the Wellesley archives.

Merrill was also engaged in a number of non-professional activities. In 1914 she reported that she was a member of the College Settlements Association, Consumers' League, National Child Labor Association, and American Society For Judicial Settlement of International Disputes. At that time she was a Presbyterian and indicated that she favored woman suffrage. In the summer of 1917 she taught trigonometry in an aviation camp. She also worked with the College Entrance Examination Board. She was a member of the Religious Education Association and the Massachusetts Civic League.

In 1942 she described herself as a Republican and a member of the Congregational church, formerly a Presbyterian. She also indicated that she enjoyed handiwork, puzzles, and writing. She made four trips to Europe, two for a year each, the last to France, Italy, and England in 1922–23. Her travel included trips to Nova Scotia in 1906; to England, Scotland, and Wales in the summers of 1911 and 1914; to California and the Canadian Rockies in the spring and summer of 1915; and frequent trips to North Carolina. She was also interested in model-making and other handicrafts, and music.

Helen Merrill died in 1949 of carcinoma at age eighty-five in her home in Wellesley. The funeral was held in the Wellesley College chapel, and she was buried in the Green-Wood Cemetery in Brooklyn, New York. She was survived by two brothers, the Rev. Dr. William Pierson Merrill, at that time pastor emeritus of the Brick Presbyterian Church in New York, and the Rev. Robert Dodge Merrill, then of Seneca Falls, New York. A special AMS fund of $650 was established by her estate to "use in the interest of mathematical research"; starting in 1971, the description of the fund changed to one that "is available for the use of the Society at the discretion of the governing bodies" (*Bull. Amer. Math. Soc.* 56:558 and 77:1134).

Organizational affiliations: AMS, MAA, Deutsch. Math. Verein., AAAS, Phi Beta Kappa.

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1903 On solutions of differential equations which possess an oscillation theorem. PhD dissertation, Yale University, directed by James Pelham Pierpont. Handwritten. Printed version, 1903, New Era Printing Co., Lancaster, PA, reprinted from *Trans. Amer. Math. Soc.* 4:423–33.

Publications:

1903 On solutions of differential equations which possess an oscillation theorem. *Trans. Amer. Math. Soc.* 4:423–33. Errata 5:551. Published version of PhD dissertation. *JFM* 34.0374.03 (G. Wallenberg); *Rev. semestr. publ. math.* 12, pt. 2: 9 (D. Coelingh). Presented as "On a notable class of linear differential equations of the second order" to the AMS, Cambridge, MA, 31 Aug 1903; abstract: *Bull. Amer. Math. Soc.* 10:62 #10.

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1918 Why students fail in mathematics. *Math. Teacher* 11:45–56.

1926 So let me work: a poem. *Math. Teacher* 19:99.

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1933 *Mathematical Excursions: Side Trips along Paths Not Generally Traveled in Elementary Courses in Mathematics.* Norwood, Mass.: Norwood Press. Reviews: *Amer. Math. Monthly* 40:602–03 (M. E. Wells); *Math. Teacher* 26:315; *Math. Teacher* 26:499–501 (D. E. Smith); *Sch. Sci. Math.* 33:798–99 (J. M. Kinney). Reprint: 1934. Boston: Bruce Humphries; review: *Math. Gazette* 19:62 (A. Inglis). Reprint: 1957. New York: Dover Publications; review: *Zbl* 080.00105 (R. Sprague).

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1921 Synthetic projective methods of generating cubic and quartic curves. *Amer. Math. Monthly* 28:359 #4. Presented to a meeting of the AMS and the MAA, Wellesley, MA, 6–8 Sep 1921.

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"Helen Abbot Merrill." *Yale University Obituary Record 1948–1949*, 142.
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