SINCLAIR, Mary E. September 27, 1878–June 3, 1955.
Oberlin College (BA 1900), University of Chicago (MA 1903, PhD 1908).

Mary Emily Sinclair was the fourth of five children of Marietta S. (Fletcher) (1840–1913), a native of Worcester, Massachusetts, and John Elbridge Sinclair (1838–1915), who was born in New Hampshire. Her parents met when, in 1869, they received the two new faculty appointments at the Worcester County Free Institute of Industrial Science (Worcester Polytechnic Institute after 1887) in Massachusetts, then a men's institution. The school had opened the previous year. Her mother, who had studied in France and Germany, was hired to teach English and modern languages. Her father, recently widowed and the father of two young daughters, arrived from Dartmouth College, where he had been on the mathematics faculty for the previous six years as associate professor 1863–66 and full professor 1866–69. He had received a BS from Dartmouth in 1858 and an MA from Washington University in 1862 and had taught at Adrian College and Washington University. Marietta Fletcher and John Sinclair married in November 1870, and Marietta Sinclair taught until 1872. Shortly thereafter their children were born; they were sons, Harry (1872–1934) and Luise Grant (1875–1950), and daughters, Alice (1876–1965), Mary Emily, and Helen Melora (1880–ca. 1968). Mary Emily Sinclair's older half-sisters were Annie, born in 1866, and Isabella, born in 1868. John E. Sinclair, who invented the ratchet wrench, remained on the faculty of Worcester Polytechnic Institute (WPI) for nearly forty years. The John E. Sinclair chair of mathematics, the first endowed professorship at WPI, was established in 1915 with a gift from John Sinclair and his children. John Sinclair made the gift to "show affection for the institute where in the early years Mrs. Sinclair and I taught together..." (R. L. Norton, "A Short History of Endowed Professorships at WPI").

Mary Emily Sinclair was born in Worcester, attended public schools there, and graduated in 1896 from Worcester Classical High School. She then attended Oberlin College and while there was a member of the LLS (Litterae laborum solanem, previously Ladies Literary Society) and president of the college YWCA. After receiving her undergraduate degree in 1900, she maintained her membership in the LLS Alumnae Association.

During 1900–01 Sinclair was an assistant teacher in Woodside Seminary, Hartford, Connecticut. She then studied at the University of Chicago and received her master's degree in 1903. Her master's thesis was accompanied by a thread model of a portion of the unbounded surface discussed in the thesis. Although the German firm of Martin Schilling listed her model among its new mathematical models in the December 1908 issue of the *Bulletin* of AMS (p. 147), no thread model appears to be extant. However, in 2003 a sculpture, "Quintic Discriminant I," of a portion of the surface was carved by Helaman Ferguson and can be seen on the artist's website.

After receiving her master's degree, Sinclair taught in spring 1903 at Lake Erie College in Painesville, Ohio. During 1903–04 she held a fellowship at Chicago. The following year she went to the University of Nebraska as an instructor and remained there for three years.

In 1907 Sinclair was hired as an instructor at Oberlin College in Ohio, where she was to serve on the faculty for thirty-seven years. She received her doctorate from the University of Chicago in 1908, having written her dissertation in the calculus

of variations under the direction of Oskar Bolza, and was promoted to associate professor at Oberlin.

Sinclair spent her first sabbatical year, 1914–15, at Columbia University and Johns Hopkins University. During that period she adopted two children, Margaret Emily in 1914 and Richard Elbridge in 1915. Both were born in New York and were infants at the time of their adoption.

Sinclair spent the year 1922–23 as a Julia C. G. Piatt fellow of the AAUW, first at Cornell and then at Chicago. Her words of appreciation for this grant were quoted in a 1956 article in the AAUW journal. The year with this fellowship allowed Sinclair to resume her research in the calculus of variations, and she presented four papers on that topic in late 1923. In 1925 she was promoted to professor and spent a year's sabbatical in Rome and at the Sorbonne. In the summer of 1925, she visited in Freiburg with Oskar Bolza, her Chicago advisor, who had returned to Germany in 1910. She spent the year 1927–28 on leave from Oberlin at the University of Miami, Coral Gables, Florida. It appears that her daughter, Margaret, was at that time attending the Exmoor School there, and in the 1930 census, her son, Richard, was listed as a cadet at Miami Military Academy in Coral Gables. In spring 1935 she was on leave at the Institute for Advanced Study in Princeton, New Jersey. In 1939 she became head of the department, and, except for spending the second semester of 1941–42 on leave at Columbia, she remained in that position until she retired as professor emeritus in 1944, having been named Clark professor of mathematics in 1941. After retiring, she taught mathematics to Navy V-12 students part time at Berea College, Kentucky, 1944–46 and was listed in the Berea catalog as "worker under special agreement."

Sinclair was a charter member of the MAA and became active in the association soon after its beginning in 1915. She served on the auditing committee 1917–19 and was appointed librarian in 1918 and assistant librarian in 1922; she also held the latter position at least in 1924 and 1925. In 1924 she was appointed to a committee "to take under advisement the general problem as to how the Association can be of service to departments of mathematics in the various colleges, and in particular to formulate standards to which departments of mathematics should conform" (*Amer. Math. Monthly* 31 (1924): 166). Finally, she served as a member of the board of trustees 1936–38.

Soon after she retired from Oberlin, a Mary Emily Sinclair prize was established there. A faculty committee awarded the prize based on papers delivered to the college mathematics club. In recognition of the support given her by the AAUW, Sinclair contributed generously to their fellowship fund. She also contributed to Oberlin to allow for the establishment of a loan fund for women to use for professional reasons.

After spending 1944–46 in Kentucky, Sinclair returned to Ohio. On May 12, 1950, Mary Emily Sinclair was severely injured on the outskirts of Oberlin when she was beaten by a seventeen-year-old youth who took her car. Accounts over several weeks in the Elyria, Ohio, *Chronicle-Telegram* describe the beating and subsequent events. She suffered a skull fracture and a broken nose after having been beaten about the head with a heavy wire cutting tool. More than a month after the assault, she gave an account at the trial from a hospital cot accompanied by a nurse and two ambulance attendants; the attacker was convicted of armed robbery and sentenced to ten to twenty years in a reformatory.

In 1953 Sinclair moved to Belfast, Maine, where she made her home with her daughter-in-law, Myrtle Sinclair. Mary Emily Sinclair died in a hospital in Belfast at age seventy-six in 1955. Among survivors listed were her daughter, two sisters, six grandchildren, and several nieces and nephews. Interment was in Worcester, Massachusetts.

Organizational affiliations: AMS, MAA (charter member), AAAS (fellow), AAUW, Phi Beta Kappa, Sigma Xi.

Thesis and dissertation:

1903 Concerning the discriminantal surface for the quintic in the normal form: $u^5 + 10xu^3 + 5yu + z = 0$. MA thesis, University of Chicago. Typescript. See also **1908b**.

1908 Concerning a compound discontinuous solution in the problem of the surface of revolution of minimum area. PhD dissertation, University of Chicago, directed by Oskar Bolza. Printed version, 1909, Salem Press Co., Salem, MA, reprinted from *Ann. of Math.* 2nd ser., 10:55–80.

Publications:

1907 On the minimum surface of revolution in the case of one variable end-point. *Ann. of Math.* 2nd ser., 8:177–88. Reviews: *JFM* 38.0410.01 (R. Haussner); *Rev. semestr. publ. math.* 16, pt. 1: 12 (W. A. Wythoff).

1908a The absolute minimum in the problem of the surface of revolution of minimum area. *Ann. of Math.* 2nd ser., 9:151–55. Reviews: *JFM* 39.0444.02 (H. Hamburger); *Rev. semestr. publ. math.* 17, pt. 1: 11 (W. A. Wythoff). Presented as "On a discontinuous solution in the problem of the surface of revolution of minimum area" to the AMS, Ithaca, NY, 6 Sep 1907; abstract: *Bull. Amer. Math. Soc.* 14:68 #34.

1908b *Discriminantal Surface for the Quintic in the Normal Form* $u^5+10xu^3+5yu+z = 0$. Halle, Germany: Verlag von Martin Schilling. Pamphlet describing thread model accompanying MA thesis. Model listed as Nr. 1, Serie 33 ("Drei Faden-Modelle der Discriminantenfläche der Gleichungen vierten und fünften Grades"), *Catalog mathematischer Modelle.* Leipzig, Germany: Verlag von Martin Schilling, 94.

1909 Concerning a compound discontinuous solution in the problem of the surface of revolution of minimum area. *Ann. of Math.* 2nd ser., 10:55–80. Published version of PhD dissertation. Reviews: *JFM* 40.0705.01 (H. Jonas); *Rev. semestr. publ. math.* 17, pt. 2: 12 (W. A. Wythoff).

Abstracts not listed above:

1909 The problem of the surface of revolution with two end points variable on circles. *Bull. Amer. Math. Soc.* 15:287–88 #20. Presented to a meeting of the AMS, Baltimore, MD, 30–31 Dec 1908.

1922 Report on the Toronto meeting with special reference to "research problems for college teachers." *Amer. Math. Monthly* 29:196 #8. Presented to a meeting of the MAA, Columbus, OH, 14–15 Apr 1922.

1923 The brachistochrone with variable end points. *Bull. Amer. Math. Soc.* 29:438–39 #12. Presented to a meeting of the AMS, Poughkeepsie, NY, 6–7 Sep 1923.

1924a The hanging chain with endpoints variable on curves in a plane. *Bull. Amer. Math. Soc.* 30:222–23 #12. Presented to a meeting of the AMS, Cincinnati, OH, 28–29 Dec 1923.

1924b The isoperimetric problem with variable end points. *Bull. Amer. Math. Soc.* 30:222 #11. Presented to a meeting of the AMS, Cincinnati, OH, 28–29 Dec 1923.

1924c A research interest in the calculus of variations. *Amer. Math. Monthly* 31:162 #8. Presented to a meeting of the MAA, Cincinnati, OH, 27–28 Dec 1923.

1930 The mathematics club, its function and its vogue. *Amer. Math. Monthly* 37:272–73 #7. Presented to the MAA, Columbus, OH, 3 Apr 1930.

1936 *What* the mathematician explains. *Amer. Math. Monthly* 43:395 #11. Presented to the MAA, Columbus, OH, 2 Apr 1936.

Presentation not listed above:
Development of college mathematics in Ohio in the past fifty years. Part of round table discussion presented to the MAA, Columbus, OH, 6 Apr 1944.

References to: AmMSc 2–8, 9P; AmWom 1935–40; BiDWSci; BioWMath.
"Campus Personalities." *Oberlin Alumni Magazine*, May 1932, 239.
Parmenter, Ella C. "Oberlinian of the Month." *Oberlin Alumni Magazine*, June 1944, 4–5.
"Ex-Oberlin Professor Dies in Maine." *Elyria* (*OH*) *Chronicle-Telegram*, 4 Jun 1955.
"Dr. Mary E. Sinclair." (Obituary) *Belfast* (*ME*) *Republican Journal*, 9 Jun 1955.
"If the Good Luck Had Not Come to Me..." *J. Amer. Assoc. Univ. Women* 49, no. 3 (1956): inside back cover.
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Other sources: Owens questionnaires 1937, 1940; Owens Papers; communications with Berea College Archives, Oberlin College Archives, and with Belfast (ME) Public Library; Gilbert Ames Bliss, *Calculus of Variations*, Carus Mathematical Monographs, Mathematical Association of America (Chicago and LaSalle, IL: Open Court Publishing Co., 1925); Green and LaDuke, "Contributors to American Mathematics"; Maltby, *History of the Fellowships*; Robert L. Norton, "A Short History of Endowed Professorships at WPI"; US Census 1850, 1870, 1880, 1900 MA; US Census 1920, 1930 OH; SSDI.

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