KETCHUM, Gertrude (Stith). August 4, 1903–September 27, 1958.
University of Georgia (BA 1924, MA 1928), University of Illinois (PhD 1934).

Gertrude Stith was born near Nunez, Georgia, the eldest of five surviving children of Louella (Jones) (b. ca. 1882) and John R. Stith (b. 1862), a farmer. Her mother was a native of Georgia and her father of North Carolina. At the time of the 1910 census, her mother was twenty-eight, had been married for eight years, and had three surviving children of four born. These were Gertrude, age six; Estelle, age five; and Mabelle, age four. Her father was forty-eight, had been married previously, and had a step-daughter, a son, and two daughters from a previous marriage. Gertrude Stith's parents had two children after 1910: Pauline, born in about 1913 and John in about 1921. Neither of the parents had an advanced education.

A school superintendent who boarded with the family was an inspiration to Gertrude Stith, who was the first of her siblings to go to college. Immediately after graduating from the University of Georgia, Stith began teaching in high schools in Georgia. She taught in Hawkinsville 1924–25 and in Athens 1925–28. In 1928 she also completed her work for her master's degree at the University of Georgia.

From 1928 to 1930 Stith was a student assistant in the mathematics department at Brown University. She borrowed money from a local bank to finance her studies there; nevertheless, she was unable to continue at Brown for financial reasons. However, she was able to continue her graduate education after obtaining an assistantship at the University of Illinois for the year 1930–31.

After a year at Illinois, on July 6, 1931, Gertrude Stith married Pierce Waddell Ketchum, a member of the mathematics faculty. Ketchum, born September 5, 1903, in Salt Lake City, had earned his bachelor's degree in 1922 from the University of Utah and his master's degree in 1923 and doctorate in 1926 from the University of Illinois. Except for periods away as a member of the Institute of Advanced Study in 1937–38, a fellow and visiting lecturer at Brown 1942–43, and as head of the analysis section of a gunnery school with the US Air Force 1944–45, he spent his career in the mathematics department at Illinois: as instructor 1926–28, associate 1928–37, assistant professor 1937–42, associate professor 1942–47, professor 1947–69, and professor emeritus after his retirement in 1969.

Because of anti-nepotism rules, Gertrude Stith Ketchum could not continue as a teaching assistant after her marriage. Although she was not allowed to teach, Gertrude Ketchum was allowed to continue as a graduate student, which she did for the year 1931–32. Their first child, Pierce Stith, was born in June 1933, after which Gertrude Ketchum resumed her studies in 1933–34, finished her dissertation in analysis under the direction of R. D. Carmichael, and received her PhD in 1934 with a minor in English. The following April 1935, their daughter, Laura Stith, was born. In a 1937 letter to Helen Owens about the summer meetings in State College, Pennsylvania, Ketchum noted her appreciation for the provision of entertainment for small children.

Gertrude Ketchum had two publications in mathematics, one based on her dissertation, which was published in 1936 in the *Transactions* of the AMS and was cited by other mathematicians into the early 1940s, and one a few years later that was coauthored with her husband. She continued her involvement in mathematics by proposing and solving problems that appeared in the *American Mathematical Monthly* and the *National Mathematics Magazine* at least through 1941. In 1983

her husband said that she was hurt by not being able to teach when they first married but that some years later she was able to teach part time.

Gertrude Ketchum had always been active and athletic with a particular interest in riding. In high school she had organized a girls' basketball team. At the University of Georgia she had been president of the university chapter of the YWCA, captain of the rifle team, and had ridden in university horse shows. Later she used her expertise in horsemanship as an instructor of equitation for five years at riding camps for girls.

In 1952 Gertrude Ketchum became ill with cirrhosis of the liver and died at home in Urbana six years later at age fifty-five. She was cremated and her remains interred at Fairlawn Cemetery in Decatur, Illinois. In 1961, three years after her death, P. W. Ketchum married Gertrude's younger sister Estelle.

In 1963 Laura Ketchum Kodama, the daughter of Gertrude and Pierce Ketchum, earned her PhD in mathematics from the University of California, Berkeley. P. W. Ketchum died on February 24, 1993.

Organizational affiliations: AMS, Sigma Delta Epsilon, Phi Beta Kappa, Sigma Xi.

Dissertation:

1934 On certain generalizations of the Cauchy-Taylor expansion theory. PhD dissertation, University of Illinois, directed by Robert Daniel Carmichael. Typescript. Printed version, 1936, reprinted from *Trans. Amer. Math. Soc.* 40:208–24.

Publications:

1936 On certain generalizations of the Cauchy-Taylor expansion theory. *Trans. Amer. Math. Soc.* 40:208–24. Published version of PhD dissertation. Reviews: *JFM* 62.0346.03 (P. Heuser); *Zbl* 015.02904 (W. Gontscharoff). Presented by title to the AMS, Chicago, 20 Apr 1935; abstract: *Bull. Amer. Math. Soc.* 41:344–45 #244.

1938 with P. W. Ketchum. On a certain class of non-linear expansions of an arbitrary analytic function. *Ann. of Math.* 2nd ser., 39:58–64. Reviews: *JFM* 64.0288.03 (P. Heuser); *Zbl* 018.13903 (F. Lösch). Presented by G. S. Ketchum to the AMS, State College, PA, 9 Sep 1937; abstract: *Bull. Amer. Math. Soc.* 43:619 #338.

Other sources: PhD dissertation vita 1934; Owens questionnaires 1937, 1940; Owens Papers; P. W. Ketchum, conversation with author and Uta C. Merzbach, 23 Mar 1983, Urbana, IL; Stanford, "The History of the Department of Mathematics at the University of Illinois"; US Census 1900, 1910, 1920, 1930 GA, 1930 RI; Illinois death certificate.

Last modified: June 23, 2011.