



## CELEBRATING WOMEN IN MATHEMATICS

### HANNA NEUMANN

1914-1971, Germany- Neumann attended Berlin University where she was taught analytic and projective geometry by Bieberbach, differential and integral calculus by Schmidt, and number theory by Schur. Bieberbach was an inspiring, if unorganized, lecturer and Hanna almost became a geometer.



After the Nazis came to power in 1933, Hanna became very unhappy. She continued as a student in Berlin until 1937, and then in Göttingen until, in 1938, she left Germany for England where she and Bernhard Neumann were married. As Bernhard was a Jew, he had been forced to leave Germany for England in 1933. (They had been secretly engaged since 1934.) Hanna studied at Oxford under Olga Taussky-Todd and completed her doctorate in 1944.

Hanna taught at Hull, and then UMIST in Manchester until 1963. She spent the year 1961-62 with Bernhard at the Courant Institute in New York. While there an invitation arrived for them to set up mathematics at the Australian National University. In 1963 Hanna and Bernhard went to Australia where she was to spend the rest of her career.

In 1971 she undertook a lecture tour of Canada, including Carleton University in Ottawa. While there she became ill and died two days later.

Like her husband, Hanna worked in group theory. Her thesis examined free products with amalgamation. Later she worked on varieties of groups and her book, *Varieties of Groups* (1967), is a classic.

*Biography courtesy of The MacTutor History of Mathematics archive*