

# Ollerenshaw [née Timpson], Dame Kathleen Mary

(1912–2014)

- E. F. Robertson
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Ollerenshaw [née Timpson], Dame Kathleen Mary (1912–2014), mathematician, educationist, and politician, was born on 24 October 1912 at 1 Parkgate Avenue, Withington, south Manchester, the second child of Charles Timpson (1881–1967) and his wife Mary Elizabeth, *née* Stops (1880–1954). Her father was the son of William Timpson, founder of Timpson's shoe shops, and worked in the shoe trade, also being a justice of the peace. Kathleen grew up close to her sister Elizabeth Jessica (1908–2003). She inherited otosclerosis from her father's family and was always partially deaf. At the age of eight, an illness brought on sensorineural deafness which left her almost completely deaf for the rest of her life. In September 1918, Kathleen Timpson entered Lady Barn House Montessori School in Withington where, at the age of five, she met her future husband, Robert George Watson Ollerenshaw (1912–1986). She was good at mathematics, always finding pleasure in patterns and numbers. When she became almost completely deaf, the school arranged for her to learn lip-reading. It was thought this was better than sign language, because with sign language you can only communicate with other people who can sign. Kathleen considered her deafness to be one of the reasons that she took to mathematics so keenly; it was one of the few subjects in which she was not disadvantaged by her deafness. At the age of nine, a new headmistress who had studied mathematics at Cambridge increased her passion for numbers. Mathematics was not Kathleen's only passion whilst at school. She enjoyed playing cricket and lacrosse and was a regular winner of the 100 metres on sports days. With sport, as with mathematics, her deafness did not put her at a disadvantage.

Kathleen attended St Leonards School, St Andrews, arriving there in May 1926. She was a boarder in Abbey Park North House and was very fond of her housemistress, Agnes Tunnicliffe (one of the first cohort of students at St Mary's College, Durham). During these years she exchanged letters with Robert Ollerenshaw. Her passion for mathematics increased despite discouragement from her teachers, who believed that teaching was the only possible career for a mathematician but that her deafness ruled this out. While at St Leonards, her passion for sport continued. She gained school colours in hockey and lacrosse and half-colours in cricket. In July 1930, immediately after taking the Higher Certificate examinations, she left St Leonards School but, after mathematics tutoring, she returned for a fortnight in March 1931 to sit the entrance examinations for Oxford and Cambridge.

Interviews at both Oxford and Cambridge proved difficult since she hadn't informed anyone of her deafness. Offered an exhibition at Newnham College, Cambridge, and an open scholarship to Somerville College, Oxford, she chose Oxford mainly because Robert Ollerenshaw was studying there preparing for a career in medicine. During her first term at Oxford they became engaged. Only in her final year did she have a mathematics tutor since Somerville College could only offer an English Literature tutor. She was tutored by the mathematician W. L. (William) Ferrar in her final year and gained a first-class degree in 1934, despite concentrating more on sport than on her academic subjects.

In September 1936, Kathleen Timpson was appointed on a temporary basis at the Shirley Institute, Manchester undertaking research on cotton. She taught herself the statistical techniques needed to test the efficiency of the different methods and ingredients used in weaving. By applying advanced algebra, she discovered a method to complete a task in six hours that usually took six days and, as a result, was given a permanent position. She married Robert Ollerenshaw on 6 September 1939 in the parish church at Didsbury, just before he was called up for war service. She continued to work at the Shirley Institute until her son Charles was born in 1941. Discussions with mathematicians at Manchester University led to her producing original results on critical lattices, and she returned to Somerville College as a tutor, gaining a DPhil in 1945 for a thesis on lattice points in non-convex regions. Five of her papers on number theory were published in 1944–6.

After the war, now a mother and housewife, Kathleen Ollerenshaw continued to work on critical lattices, taking up a part-time lecturing position at Manchester University. In 1946, her second child, Florence, was born. In 1949, Ollerenshaw was given one of the first hearing aids which, although uncomfortable to wear, completely revolutionized her life. In 1950, she began her life of public service, becoming a governor of St Leonards school; she was president from 1980 to 2003. She later became the school's representative on the Association of Governing Bodies of Girls' Public Schools (which she chaired from 1963 to 1969). In 1952, she became a member of the National Council of Women and produced her first report on the state of school buildings in Manchester. She started work on improving conditions in schools, publishing an article, 'Old School Buildings', in the influential journal *Education* (published by the Association of Education Committees), which outlined the appalling conditions of school buildings. In 1954 she became a co-opted member of the Manchester Education Committee, which she later chaired from 1967 to 1970. From 1956 until 1981 she was elected as a Conservative member of Manchester City Council, becoming a member of the council's finance committee.

In 1960, Ollerenshaw joined the Central Advisory Council for Education. An improved hearing aid allowed her to appreciate music, and she became involved in the merger of the Royal Manchester College of Music and the Northern School of Music to create the Royal Northern College of Music in 1973; she was the first chairman of the new college's governing body, holding that position until 1986. She had been elected to the governing council of the British Association for Commercial and Industrial Education in 1963. This took her to the USSR to learn about their post-school educational opportunities. She went to the USA in 1965 with the Winifred Cullis Fellowship, a three-month exchange programme between the USA and the UK.

In 1971, Ollerenshaw was appointed DBE for services to education. Sadly, shortly after receiving notification, her daughter Florence was diagnosed with cancer; she died at home in October 1972. In June 1972, Ollerenshaw started a part-time senior research fellowship at Lancaster University in the Department of Educational Research, and in the following year she became the first chair of the new Greater Manchester County St John Ambulance Brigade. Having worked alongside Alan Turing at Manchester University, she was aware of the developments in computer science and was the first person to introduce computers to the organization.

Kathleen Ollerenshaw was elected Lord Mayor of Manchester in May 1975. When her year as Lord Mayor was over, she took a holiday with Robert in Malta, where she wrote a children's book, *The Lord Mayor's Party* (1976). She became a founder fellow of the Institute of Mathematics and its Applications (IMA) in 1964. In 1970, she joined the IMA's governing council and was president in 1978–9. Through the IMA, she first met Hermann Bondi, with whom she later worked on magic squares. In her presidential address, 'The Magic of Mathematics', she discussed the beauty of mathematics and her experiments with soap film bubbles. Her work on soap film bubbles also formed the basis of many of her lectures.

Robert Ollerenshaw died in 1986 and Kathleen's son Charles also predeceased her, in 1999. She became almost blind in 2000 but managed to continue correspondence using mechanical aids. In 2004 she published her autobiography, *To Talk of Many Things*. She spent her last years in Laurel Court Nursing Home, Didsbury, where she died from a urinary tract infection on 10 August 2014.

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