

Lee, Alice Elizabeth (1858–1939), statistician and eugenicist

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- Chris Renwick

Lee, Alice Elizabeth (1858–1939), statistician and eugenicist, was born at Dedham, Essex, on 28 June 1858, the third of five daughters to William Lee (1821/2–1887), master coach builder, and his wife, Matilda Wrenn, *née* Baker (1822/3–1903). She spent her early years in Dedham, where the family lived in a house attached to her father's coach-building shop on the high street. Her two elder sisters were governesses. In 1876 she enrolled at Bedford College, London. She was in the college's first class in higher mathematics and in 1884, six years after the University of London allowed women to sit degree examinations, she became the first Bedford student to be awarded the degree of BSc, and also graduated BA in 1885. She stayed on at the college until 1916, teaching mathematics and physics.

As one of Bedford College's most distinguished early graduates, Lee took it upon herself to respond to the biostatistician Karl Pearson in 1892, after he criticized the college, arguing that it was not staffed by experts, as he believed universities should be, but by generalist teachers (Pearson to Lee, 19 Feb 1892, cited in Love, 148). Pearson was impressed by Lee, believing she was open to training in his pioneering biometrical methods. In 1895, along with George Udny Yule, Pearson's demonstrator and later an eminent statistician in his own right, Lee attended Pearson's first course of lectures on advanced statistics. Pearson employed Lee as an assistant while she carried out the research in the late 1890s for her London DSc thesis.

Lee was attracted to the aspects of eugenics that involved using science in the name of political equality and to undermine false belief and superstition. Her doctoral work illustrated these interests. Craniology and cranionomy were popular topics throughout the nineteenth century, with anthropologists particularly keen on using skull measurements as proxies for intelligence in their studies of race. Lee's research, which collated measurements supplied by anthropologists and archaeologists around the world, including Germany and Egypt, showed that skull size was not correlated with contemporary ideas about a hierarchy of human races. Lee tried to illustrate her point further with the skull measurements of thirty-five leading anatomists, which had been published in the *Journal of Anatomy* of 1898. Her aim was to show that men of undoubted intellectual prowess did not necessarily have the largest skulls. However, Sir William Turner, of the University of Edinburgh, refused to accept the premise of the exercise and was riled at being ranked near the bottom. When Lee submitted her thesis for examination in 1899, Turner was employed as an external examiner and made a number of serious and unfounded accusations about its quality and originality. Francis Galton was

eventually asked to settle the dispute and Lee was awarded her doctorate by the University of London in 1901. The substance of her thesis was published as 'Data for the problem of evolution in man: a first study of the correlation of the human skull', in the *Philosophical Transactions of the Royal Society of London* (196A, 1901, 226–64).

As one of Pearson's élite group of students, Lee co-wrote several papers with him at the turn of the century, including one on the inheritance of characteristics that could not be quantified easily, such as eye colour; another argued that fertility is inherited, therefore explaining the different rates of fertility that were then being recorded in different social classes. Both of these papers appeared in Pearson's 'Mathematical Contributions to the Theory of Evolution' series, published in the *Proceedings* (66, 1900, 324–7) and *Philosophical Transactions* (192A, 1899, 257–330) of the Royal Society. These publications were notable for appearing at a time when few women were able to claim authorship of articles in Royal Society journals, because they depended on the patronage of male collaborators to have papers read at the society's meetings.

Lee was employed in the Galton Eugenics Laboratory at University College, London, where Pearson considered her almost indispensable, thanks to her highly refined mathematical and statistical skills. Yet her career there was cut short by poor health. The exact nature of her problems is unknown but she complained that the cold and dank conditions in the Eugenics Laboratory, where the radiators were often broken, made her feel much worse (Pearson, IIIA, 328). Lee resigned in 1907, creating an opportunity for Ethel Elderton, whom Lee had taught at Bedford College and two years earlier had recommended for a clerical position in the Eugenics Record Office, the laboratory's predecessor.

During the First World War Lee took government employment at the Munitions Inventions Department, where she worked on gun trajectories, and then as a computer for the Admiralty. She continued to work for the Eugenics Laboratory on and off, however, until 1927, when she officially retired. Despite her distinctions as a scholar and long years of work, she was not entitled to a pension, having missed out on UCL's occupational scheme and earned relatively little when she was in full-time employment. Pearson and Margaret Tuke, principal of Bedford College, pleaded her case to government, which led to a civil list pension of £70 per year, giving her a meagre, albeit welcome, income during old age. In retirement Lee, who never married, settled in Woodlands Avenue, Rustington, Sussex, and died at the Peter Pan nursing home, Rustington, on 5 October 1939. She was buried in Littlehampton cemetery. Ethel Elderton was her executor.

Sources

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