# Introduction
## Setting the Scene

On 7 April, 1875, mathematics students turning up for their morning lecture at University College London were surprised to see a message chalked on the blackboard. It read, 'I am obliged to be absent on important business which will probably not occur again.' The Professor of Applied Mathematics and Mechanics, William Kingdon Clifford, was getting married on that day. He had come to London from Trinity College, Cambridge, in 1871 and was twenty-nine years old. He was highly intellectual, tremendously popular, slightly eccentric and such a brilliant lecturer that he had taken the academic world by storm. His bride to be was Sophia Lucy Jane Lane. She was one year younger than William Clifford and had already begun to establish herself as a novelist and journalist. He and Lucy made a most attractive and lively couple and they drew around them a wide circle of friends from all walks of life. In 1874, when their engagement had been announced, William Clifford received this letter:

> Few things have given us more pleasure than the intimation in your note that you had a fiancée. May she be the central happiness and motive force of your career, and by satisfying the affections, leave your rare intellect free to work out its glorious destiny. For, if you don't become a glory to your age and time, it will be a sin and a shame. Nature doesn't often send forth such gifted sons, and when she does, Society usually cripples them. Nothing but marriage – a happy marriage – has seemed to Mrs Lewes and myself wanting to your future.[1]

The letter was from his close friend, the publisher, writer, and philosopher George Henry Lewes. Mrs Lewes was, of course, George Eliot. Her many books – among them, *Adam Bede*, *The Mill on the Floss*, *Silas Marner* and *Middlemarch* – had made her famous. George Lewes, although already married and with children, had nevertheless formed an association with her and they lived together as 'Mr and Mrs Lewes' They both loved William Clifford, and he and Lucy were frequent visitors at *The Priory,* their London home. George Eliot's letter, in some ways foresaw the pattern of William and Lucy's life together. Lucy did become 'central to his happiness', William did become a 'glory to his age and time', and his 'glorious destiny' has been achieved in spite of his early death.

The nineteenth century was a time of enormously exciting scientific discovery and progress, and William Clifford, who was judged in his lifetime to be one of the most outstanding scholars of the century, made important contributions to that progress. His books, papers, and brilliant researches,

many of which were left incomplete at his premature death, were assembled and published later by his colleagues. Even the greatest scientific minds of that time, however, could never have predicted that today, in less time than it takes to read the first page of this book, regular electronic bulletins would be flashed around the world linking the groups of mathematicians and physicists whose researches are associated in some way with this nineteenth-century scholar.

Bertrand Russell noted in 1945, that, besides being a mathematician, Clifford was a great philosopher who: 'saw all knowledge, even the most abstract, as part of the general life of mankind, and as concerned in the endeavour to make human existence less petty, less superstitious and less miserable'.[2]

Russell also wrote of Clifford's book, *Common Sense of the Exact Sciences*, 'All that is said in it on the relation of geometry to physics is entirely in harmony with Einstein's theory of gravitation, which was published thirty-six years after Clifford's death.'[3]

Among William Clifford's many friends were Thomas Huxley, George Eliot, Lord Morley, Frederick Pollock, John Tyndall, and Leslie Stephen. Among his academic contemporaries were James Clerk Maxwell, Lord Kelvin, Arthur Cayley, J. J. Sylvester, Oliver Lodge, Karl Pearson, who succeeded him at University College, and H. J. S. Smith of Oxford. In Europe there were C.F. Klein, H. von Helmholtz, Hermann Grassmann, and Ludwig Boltzmann, and in America, J. Willard Gibbs and C.S. Pierce.

A biographical study of William Clifford was made in 1879, the year of his death, by Frederick Pollock. His lovingly written introduction to William's *Lectures and Essays*[4] provided a contemporary picture of this mathematical genius. There is no previous biography of Lucy Clifford and piecing together the early part of her life presented some problems.

Biographers, rustling through the dry leaves of the past and rearranging them in order to reveal their story, sometimes uncover forgotten events and sometimes, too, uncover events that were intended to remain hidden. So it was with research into the life of Sophia Lucy Jane Lane. She was born in 1846. After the early death of her husband she became a successful writer of books and plays. She formed important friendships and she left some unsolved mysteries behind her. Three of the most famous American men of the age were extremely fond of her, and one of them, Henry James, was a very close friend indeed. He wrote to her as his 'Beloved girl' and singled her out with a bequest in his will. In the Valehouse Collection,[5] there are only ten letters from Henry James to Lucy and nine of them are undated. This small number is surprising until we realise that it is actually an indication of how generous Lucy was. She had saved over seventy of James's precious letters and she might well have hung on to them. However, when she heard that Percy Lubbock was preparing an edition of the James letters, she packed up sixty-four of the most interesting ones and sent them to Theodora Bosanquet, Henry James's amanuensis. She typed them out for

Lubbock who subsequently published eight of them in full. Leon Edel drew upon them for his *Life of Henry James* and published four of them in his editions of James's letters. Percy Lubbock promised to return the originals to Lucy after they had been copied but no trace of them has been found. However, the typed copies are held at the Houghton Library in Harvard and the full collection, edited and annotated by Marysa Demoor and myself, is published in the *English Literary Studies* 1999 series from the University of Victoria under the title *'Bravest of women and finest of friends': Henry James's Letters to Lucy Clifford*. In one of these lovely letters to her he wrote, 'But what a life you lead! I feel – beside you – like a slug in a damp village garden: you the gorgeous butterfly in the social (and other) blue.'[6] One of the clearest indications of Henry James's feeling for her was shown in the summer of 1912 when he was sixty-nine and Lucy was sixty-six. He must have disappointed Lucy in some way and she let him know of it. He reassured her with these words:

> Dearest Lucy,
> What shall I say? When I love you so very, very much and see you nine times for the once that I see Others! Therefore I think that – if you want it made plain to the meanest intelligence – I love you more than I love Others. I am no great protester now, in my somewhat stricken old age; but I am always your devoted old Nevvy and (at 11.15 p.m.) rather fatigued sleepyhead,
>
> Henry James.[7]

These direct words, uncluttered by the flowery or oblique style typical of so much of Henry James's letter writings, would have left Lucy, and leave us, in no doubt about the place she held in his affections. At the other extreme Virginia Woolf, in her letters and diaries, wrote extraordinarily cruel and disparaging words about her.

Lucy lived for fifty years as William Clifford's widow. Her writing, her travels and the care of her two daughters kept her fully occupied. Her many friendships sustained her, and her enduring interest in life kept her youthful. Over the years she had collected together a trunkful of treasured correspondence and in the last months of her life she sorted through that collection and destroyed many letters that she did not want others to read. The rest of the letters – there are nearly one thousand – she replaced in the trunk with a note attached. It read, 'Save these, they will be valuable one day.' These letters – *The Valehouse Collection* – illuminate the story that is to follow.

Lucy Clifford's correspondents came from every sphere of life. She exchanged letters with publishers and prime ministers, ambassadors and actors, scientists, philosophers, writers, poets, and politicians. To the eminent friends she had shared with her husband she added Bernard Shaw, Edmund Gosse, Mrs Humphry Ward, Rudyard Kipling, Sir Sidney Colvin, Arnold Bennett, H. G. Wells, Lord Fitzmaurice, Charles Morgan, Ellen Terry, Frederic Harrison, and many, many more. The distinguished Americans, James

Russell Lowell and Oliver Wendell Holmes Jr., were two of her very special friends, and Dr Page, the American Ambassador to London during the years of the war, was also a frequent visitor to her home. One of her daughters married Fisher Wentworth Dilke, eldest nephew of Sir Charles Dilke the politician who in 1885, as a result of what was one of the most publicised political sex-scandals ever, lost his chance of following Gladstone as Prime Minister.[8]

Lucy Clifford's novels and plays were popular when she wrote them and were set in the rapidly changing times in which she lived. Through them she illustrated the restricting formalities of the age. When she was a young woman, marriage could lead to subjugation, and divorce could lead to ostracism for the women concerned. By the time of her death in 1929, social conventions, especially those regarding the role of women in society, were relaxing fast. The First World War and the Women's Suffrage Movement had swept aside many of the confinements and restraints that had so frustrated the lives of Victorian and early Edwardian women. Many women writers were casualties of the changes in conventional thinking that followed those events. New-style readers wanted new-style ideas, and Lucy suffered the fate of many other women writers from the 1890s and turn-of-the-century – she and her books are little known today.

Lucy was at the centre of London society and supremely well placed to write a fascinating autobiography, and yet she never produced one. She told Virginia Woolf that she would never do it, for 'Lucy Clifford never gives away a secret'.[9] That may well have been her reason, because loyalty to friends was one of her strongest tenets, and one of the reasons for her popularity. However, there is another possible explanation. If she had written her life story, she would have had to reveal the truth concerning two small mysteries about her that remained unexplained at the time of her death.

William Clifford's genius was recognised in his lifetime but he died at the age of thirty-three. It is in recent decades and particularly since the first full international Clifford Algebra conference held at the University of Kent at Canterbury in 1985, that the development and application of his mathematical theories have become widespread. Today, all over the world, there are research centres actively extending ideas originating from William Clifford's work. During 1995, the 150th anniversary of his birth, international meetings were held in Canterbury, Mexico, Canada, Madeira – where he died – and at the Newton Institute in Cambridge.

Thomas Hardy, who knew both the Cliffords, wrote that, 'experience is as to intensity and not as to duration'. Lucy was married to William for four brief years and Hardy's words could epitomise their relationship. Her husband remained fresh in her memory and heart throughout her fifty years of widowhood. He is buried in Highgate Cemetery. On his tombstone, which can be found quite close to that of Karl Marx, are the lines he composed himself as he lay dying. They are well known to his followers:

William Kingdon Clifford
Born May 4th, 1845
Died March 3rd, 1879

I was not, and was conceived:
I loved and did a little work.
I am not, and grieve not.

When Lucy died she was buried beside him. These lovely words were added to the tombstone and from them has come the title for this book:

And
Lucy, his wife
Died April 21st, 1929

Oh, two such silver currents when they join
Do glorify the banks that bound them in.

**Notes**

1. G. S. Haight (ed.), *The George Eliot Letters*, Oxford University Press, 1954, Vol.VI, p. 102.
2. W. K. Clifford, *The Common Sense of the Exact Sciences*, New Edition 1946, Alfred A. Knopf, New York, p. ix.
3. ibid.
4. W. K. Clifford, *Lectures and Essays*, Macmillan and Co.Ltd. 1879, Introduction.
5. The Valehouse Collection. A private collection of William and Lucy Clifford's letters and papers.
6. M. Demoor and M. Chisholm, (eds.) '*Bravest of women and finest of friends': Henry James's Letters to Lucy Clifford*, University of Victoria 1999, item 15.
7. As note 6, item 45.
8. David Nicholls, *The Lost Prime Minister: A Life of Sir Charles Dilke,* Hambledon Press, 1995; R. Jenkins, *Sir Charles Dilke: A Victorian Tragedy*, Collins, 1958.
9. A. O. Bell (ed.), *The Diary of Virginia Woolf,* Hogarth Press, 1977-1984, Vol 2, entry for 24 January 1920.