March 2023 Mary Somerville: women can become great mathematicians too!

Speaker: Isabel Gordon

GLHS marked International Women's Day on March 8th with a talk about one of the 19th century's most impressive scientists, born Mary Fairfax in Jedburgh in 1780. She lived until she was over 90, by which time she was well-known not just as a mathematician, but also as a philosopher and general polymath. Our speaker gave an account of someone driven by a thirst for knowledge, which enabled her to overcome the prejudices against women's capabilities which prevailed well into our day.

Mary's father was in the navy and later became an Admiral. Mary spent her early years in Bruntisland in Fife but she was born in Jedburgh when, with her father away at sea, her mother was staying with her sister who lived in the Borders. She seems to have often visited Jedburgh, where her uncle, Thomas Somerville, was a minister and there were cousins to meet as well.

To begin with, little attention was paid to Mary's education. Girls were expected to learn to sew and to dance. She was not taught writing and accounts until she was ten, spending her time instead observing the natural world. Mary learned Greek, Italian, German and French, and was helped in her explorations by the tutor of her younger brother, who provided textbooks which were otherwise denied to women. Reading seems to have opened up a vast world of knowledge to her absorbent mind and mathematical brain. She found she had a talent for drawing, and for a while studied under the great Scottish artist Alexander Nasmith, who introduced her to geometry.

In 1804, she married an officer then in the Russian Navy, and they moved to London and she had two children. Her husband was not interested in her intellectual pursuits, so it was perhaps fortunate for Mary that he died three years later, though she was left with two small children but luckily a reasonable income. She had already begun a correspondence with leading Scottish mathematicians of the day, and was beginning to have a reputation for her acute understanding.

Her personal life took a more positive turn in 1812, when she married one of her cousins, Dr William Somerville, Inspector of the Army Medical Board, who had overseas experience and

an appetite for knowledge. They clearly became an ideal academic team, although there were four more children to look after too. By this time her work was attracting scientific recognition, and when she and her husband lived in London she was able to move on equal terms in the scientific circles in which he moved. It was a time of very lively scientific inquiry and practical invention, and she found herself at the centre of a stimulating circle of friends. She not only published academic journal papers on her own account but, with her language skills, took on the work of translating scientific texts into English. She made a major contribution through her translation of Pierre-Simon Laplace's *Mécanique Celeste* (The Mechanism of the Heavens). Published in three volumes in 1831, this was much more than a translation, as Mary added clear explanations and diagrams. The work was a very great success and Mary was asked to do more translation work as a result.

When her husband became ill in the late 1830s, he left his army appointment so that they could move to Rome. He died in 1860, but Mary continued to publish texts and take an interest in new developments well into her 80s. She was always deeply committed to promoting women's education and Somerville College in Oxford, founded in 1879, was named after her. When in 1868 John Stuart Mill was organising a petition to demand votes for women, he asked her to be the first signatory. Sadly, this petition failed. She may have been very sad to know that women had to wait another sixty years to get the vote. More recent recognition includes an asteroid belt and a satellite named after her, and she now features on a Royal Bank of Scotland note. Surely Mary Somerville is an inspiring beacon of what women can achieve.