

# In from the cold

Mary Somerville's contribution to science has been undervalued.

## Mary Somerville and the World of Science

by Allan Chapman  
*Canopus*: 2004. 176 pp. £12.95

## Collected Works of Mary Somerville

edited by James A Secord  
*Thoemmes Continuum*: 2004. 9 vols, £750

Patricia Fara

The educational reformer Maria Edgeworth urged women to study chemistry, although she made it sound like a glorified form of cookery by saying it “demands no bodily strength” and “applies immediately to useful and domestic purposes”. But as Allan Chapman reveals in his lucid biography of Edgeworth's close friend Mary Somerville (1780–1872), it was the male astronomer John Herschel who ventured into the kitchen. Herschel told Somerville that he had purloined a dead lobster to examine the spectral pattern of its phosphorescent glow. Somerville herself was a talented mathematical physicist endowed with organizational abilities that enabled her to run a substantial household while carving out her reputation as one of Victorian England's most famous scientists. As Edgeworth quipped: “Her head is among the stars, her feet are firm upon the Earth.”

Then, as now, Somerville intrigued commentators because she was an unusual woman, but Chapman — an eminent historian of astronomy — quite rightly stresses her scientific significance. As evidence of her research capabilities, she published original articles in several leading journals, including the *Philosophical Transactions* of the Royal Society. But her achievements were not an indication of equality. Excluded from the male enclave of the Royal Society, she delegated to her husband the privilege of reading out her paper (although the society's fellows did pay Somerville the dubious tribute of installing a marble bust of her in the hallway).

Although Somerville was barred from universities and official societies, she did more than most men to promote scientific awareness. Her books interpreting the latest scientific ideas were far from being simplistic popularizations, and tackled complex contemporary problems in mathematical physics. Pierre Laplace, the self-styled ‘French Newton’, respected Somerville so highly that he chose her to explain his mathematical astronomy to the British scientific community, and her book *Mechanism of the Heavens* converted Laplace's five dense volumes into a scholarly yet accessible vision of



Star turn: Mary Somerville did more than most men to promote astronomy and physics.

the universe. Fifteen years later, she sold more than 15,000 copies of her book *On the Connexion of the Physical Sciences*, an eloquent review of cutting-edge science that consolidated as well as disseminated the latest discoveries.

Chapman has produced a new pocket-size biography of Somerville, and its timing reflects a growing academic interest in her work. Unknown to Chapman, James Secord, a science historian at the University of Cambridge, was simultaneously preparing a splendid edition of Somerville's collected works. Benefiting from illustrations and independent introductions, the nine volumes present facsimile versions of all her publications, including five previously unknown mathematical solutions found through some nifty sleuthing work in the archives. The range of topics displays the breadth of Somerville's accomplishments: some volumes bristle with formulae, whereas others discuss, for example, tiny marine organisms, Antarctic birds, comets, volcanoes and education. The final volume is reserved for her “personal recollections” and provides a fascinating insight into Victorian networks as well as her own experiences.

Despite her prominence during her long life, Somerville has been doubly marginalized. As a woman, she has been set apart from mainstream scientists and studied as an oddity; and as an interpreter, rather than an originator, of scientific knowledge, she has been relegated to the sidelines. Both Chapman and Secord insist that she be brought centre-stage and considered within the full context of nineteenth-century science and its impact on society. Secord's efforts will make that process of integration much easier, and the size and scope of his collection testify to Somerville's importance.

His publisher's welcome initiative to make her original texts accessible to scholars signals a shift in the type of question that historians ask about science's past. Instead of concentrating on great discoveries, theories and inventions, they are now analysing how science has come to be so dominant. Science is successful, they argue, not simply because it is right, but because people say it is right. This reassessment is vital not only for Somerville herself, but also for the larger project of demonstrating that science's history is about far more than equations, instruments and great men. To understand how science came to form the backbone of our modern world, we need to describe not only what happened inside laboratories and libraries, but also what happened in the outside world.

Shifting the focus has demonstrated that, although in the past women made different contributions from men, their work was far from insignificant. Chapman argues that Somerville could only have flourished in what he repeatedly refers to as Britain's unique “grand amateur scientific environment”. One striking counter-example is Emilie du Châtelet, Somerville's French Enlightenment equivalent who had translated and commented on Isaac Newton's work much as Somerville did for Laplace.

Before the twentieth century, there were so few outstanding scientific women that it is tempting to make each one a special case, although many of them shared three characteristics: brains, wealth and an accommodating partner. Nevertheless, from a modern perspective, it is dispiriting to recognize that women believed in their own inferiority. “I have perseverance and intelligence but no genius,” wrote Somerville, “that spark from heaven is not granted to the sex.” ■

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