

## Book Reviews

difficulty posed by complicated results: confronted by mixed findings about lethal matters, what is one to do?

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**Kathryn A Neeley, *Mary Somerville: science, illumination, and the female mind*, Cambridge Science Biographies, Cambridge University Press, 2001, pp. xvi, 263, £40.00, US\$64.95 (hardback 0-521-62299-9), £14.95, US\$22.95 (paperback 0-521-62672-2).**

If asked to describe Mary Somerville, the renowned scientist and popularizer of science, one could do worse than follow the lead of her most recent biographer and plump for the notion of counterpoise.

According to Kathryn Neeley, Somerville both recognized and articulated the principle of counterpoise in nature, where many forces act with each other in various ways to maintain equilibrium. Although she did not necessarily apply the term to herself, Neeley argues that Somerville successfully negotiated her position as a female scientist in the highly gendered world of nineteenth-century science by an astute awareness of the balancing act required. The author believes counterpoise might in fact be a useful model for the historical analysis of gender, being more sensitive than the usual dualities, which involve only two opposing forces. That is a general project for the future, but her exposition in Somerville's case is well made.

Neeley shows that despite her gender, Somerville was not just the passive recipient of male favour, but was able to set some of the terms by which she interacted with her fellow scientists and conducted her scientific life. For instance, early in her career Somerville earned the praise of fellow astronomer William Whewell for her translation and exposition of La Place's work because it was not written with the

usual trappings of female discourse, particularly an apologetic and deferential tone. Somerville had from the first established her own ungendered written style, which contrasts with the highly feminine presentation in the self-portrait reproduced as the frontispiece to the book.

In her private life, Mary enjoyed more happiness after the death of her first husband and subsequent second marriage to William Somerville. This brought greater domestic harmony and support for her science, even if the family moved to Italy for health and financial reasons. Mary's writing contributed significantly to the Somerville domestic economy. Although there was always correspondence and visits, Italy removed Mary from the informal scientific networks in which she had participated. However, Neeley is not much interested in the domestic details of the Somerville home, covering the outline of her life in a few early pages. What fires her interest is Mary's writing, its reception and what this can tell us about science and gender in the nineteenth century.

Although famous in her long lifetime, with a stream of revised and undated texts, Somerville has been partially excluded from histories of nineteenth-century science, particularly those concerned with original discoveries. Somerville, says Neeley, makes us think again about what the practice of science involved in the nineteenth century and how historical analysis can reflect current notions where popularizers are distinct from the doers of science. Indeed she challenges the categorization of Somerville as "popularizer" given the complexity of the mathematics and astronomy explicated in her texts.

Seeking to draw together the Somerville corpus as a whole, Neeley emphasizes the importance of the scientific sublime. The majesty of the universe, as revealed through astronomy, and the telescope, and the minutiae of life brought to our senses by the microscope, are unified by Somerville's love of nature. She translates her response

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to the natural world into the language of popular science and presents this for the edification of others. These values were popular in the first half of the nineteenth century but less widely held in the second half, after challenges such as the *Origin of species* threatened the aesthetic sublime of nature.

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**Mary Lynn Stewart,** *For health and beauty: physical culture for Frenchwomen, 1880s–1930s*, Baltimore and London, Johns Hopkins University Press, 2001, pp. xxi, 274, illus., £29.50 (hardback 0-801806483-6).

Mary Lynn Stewart's wide-ranging history of physical culture at the turn of the century contains a wealth of interesting facts about how women's bodies were categorized. That does not make it either an easy or ultimately very satisfying read. Though Stewart acknowledges her debts to Michel Foucault and feminist theory, she does not take on current debates on the body and gender identity directly in her text. Her book lays out a myriad of examples of how scientists, health practitioners, hygienists and educators understood women's biological and physical form. Though the book's preface lays out the historiography and her main themes, the chapters are not clearly connected and even the conclusion feels unfinished.

Stewart's first chapter outlines the creation of a two-sex model based on scientific principles, while her second shows how the science of endocrinology both supported and questioned this model (though it also covers a variety of other issues such as the level of medical education available to women). These

scientific judgements about femininity are only peripheral to her main focus on the education of women about their bodies through schooling, medical advice, beauty manuals and advertising. In chapter three, Stewart argues that medical science had to alter its message to convince Frenchwomen to adopt new rituals of health and hygiene seen as necessary to the prosperity of the nation. Hygienists, after the discovery of germs, influenced women's behaviour by appealing to their interests. To do so they used beauty manuals, linking cosmetic comeliness with health in a successful manipulation of women's vanity.

If hygienists succeeded in imparting healthier practices to women of the middle-classes (while accepting cosmetics), other professionals concerned with the reproductive capabilities of the female body were less successful. Part two presents the dominant pronatalist vision divided into chapters on puberty, sexuality and menopause. Stewart argues that the education available to women about their sexuality was disturbing and vague, discouraging women from wanting to procreate. Over time, especially after the war, improvements were made in perceptions of female sexuality. Some sex education books stressed the need for female arousal, though most were aimed at husbands rather than wives. Publications encouraged regular intercourse to benefit the entire organism. Yet these arguments had more to do with female reproductive functions and the health of the nation's children than female pleasure. Tellingly, menopause was still seen as a loss of identity and self, a vision emphasized by discoveries in endocrinology.

The final section of the book focuses on physical activity: sports and work. Concerns with girls' fitness (for their later role as mothers) led to the implementation of exercise regimes in schools by the 1890s, though Stewart points out that France was well behind Great Britain in