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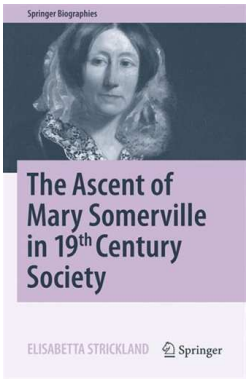
The Ascent of Mary Somerville in 19th Century Society

by Elisabetta Strickland, Springer Biographies, 2016, ISBN: 978-3-319-49193-6

Review by L. Angela Mihai



The book "The Ascent of Mary Somerville in 19th Century Society" by Elisabetta Strickland beautifully follows the life and work of the distinguished British scientific writer Mary Fairfax Somerville (1790-1872), from her wild and carefree childhood in rural Scotland to her unprecedented rise as a strong mathematical mind with a unique insight into the latest scientific discoveries of her time, which led to an Honorary Fellowship of the Royal Astronomical Society (1835), to her colourful and exciting nomadic life in Italy (1840-1872). By paying attention to both the ups and downs of her personal life and the efforts and rewards of her scientific work, Mary Somerville is portrayed not as a historical figure, but rather as a real person with a complex and charming personality capable of inspiring generations to come. In this book, Mary Somerville's love for science and mathematics in particular, which led her to public and international recognition, is matched by that for her family and friends. For her parents, whose efforts as far as Mary's education was concerned meant preparing her for a good marriage, she felt that "they had been misled by conventional points of view about women and their intellectual pursuits" (p. 5). For her second husband, Dr William Somerville, FRS (1771-1860), who endeavoured to support Mary's scientific work by introducing her to important social circles, copying and critically reviewing her manuscripts and maintaining on her behalf the correspondence with male scientists who would find writing directly to her socially unacceptable, she chose to move to Italy where his health would benefit from a warmer climate. Her husband's deteriorating health also meant that the income generated by Mary Somerville's scientific dissemenations eventually became the main source of family income. Mary's love for her family further manifested in wanting to give to her children something she never had, the opportunity to learn as much as possible from an early age. She would however not be spared the pains that many parents had to endure at a time when common infectious diseases cut short the lives of many young children, but perhaps her strong self-discipline and love for scientific investigation also constituted a source of strength in overcoming such personal tragedies. Her open and approachable personality is also captured through a glimpse into her friendship with Ada Lovelace (1815-1852), Lord Byron's daughter, who became the first computer programmer as she was the only person who understood the importance of the analytical engine designed by Charles Babbage (1791-1871): "When Ada encountered difficulties in some calculations, she would walk to Mary Somerville's house and they would straighten the matter up over a cup of tea" (p. 16). Her first book, entitled "On the Mechanism of the Heavens" (1931), was commissioned by Lord Henry Brougham (1778-1868), the founder of the Society for the Diffusion of Useful Knowledge in Edinburgh, on account that "no more than twenty people knew the contents of Newton's Principia and Laplace's Mechanique Céeleste, and no more than a hundred knew them even by name" and thought that "Mrs. Somerville could add two cyphers to each of those figure". With characteristic modesty, Mary Somerville wanted to decline the invitation, but accepted in the end "upon the condition of secrecy, so that if she failed, the manuscript could be put on fire" (p. 18). This should be a humbling lesson in self- criticism for many scientific authors even today. The book was completed and published when Mary Somerville was fifty-one years old, and was an international success, as it clarified and enhanced Laplace's work through many independent calculations and detailed diagrams, which were missing from the original work of the French mathematician. Three other major

books followed: “On the Connexion of the Physical Sciences” (1834), “Physical Geography” (1848), and “On Molecular and Macroscopic Science” (1869), and Mary Somerville’s love and care for the scientific work which she continued to support enthusiastically and interpret for the benefit of others rewarded her with many valuable friends who were only too happy to keep her up-dated on their latest scientific discoveries, unlike at the earlier stages of her investigations when she drew all the information through extensive and assiduous reading. To offer a direct insight into Mary Somerville’s clear and poetic style, Elisabetta Strickland’s book concludes with substantial extracts from the preface entitled “Preliminary Dissertation” of “On the Mechanism of the Heavens”, written for a broad audience and printed separately to entice the uninitiated to “Science, regarded as the pursuit of truth, which can only be attained by patient and unprejudiced investigation, […], whether it be in the discovery of a world, or of a new property of numbers” (pp. 84-85). This new book on Mary Somerville’s long and rich life is therefore a very welcome addition to the existing biographies of this polyhedric personality and should serve as an inspiration to all those who wish to learn more about her scientific work and pioneering dissemination.

L. Angela Mihai

L. Angela Mihai is a senior lecturer in applied mathematics at Cardiff University. She received her DPhil from the University of Durham, UK, in 2005, then worked as a postdoctoral researcher at the Universities of Strathclyde, Cambridge, and Oxford, before joining the faculty at Cardiff in 2011. Her main research interest is in the mathematics and mechanics of solids at the interface with physical and life sciences.