



biologist Rupert Riedl, famous for the concepts of ‘burden’ and ‘diagrammatic morphotype’ illustrating the interconnectedness of characters. Tamborini sees the Raup/Seilacher ‘non-adaptive morphogenetic programs ... using computers’ (p. 158) as an anticipation of Gould and Lewontin’s seminal manifesto ‘The spandrels of San Marco’ of 1979.

Although architecture as such (through Otto, Le Corbusier, Nervi and Buckmaster Fuller) played a part in the overall story, the title of this book refers to a broadly structuralist approach to morphology and to the influence of engineering and mechanics, especially prominent in Germany. But palaeontologists provided the morphological data calling for explanation, data primarily of static, adult forms evolved over eons. Tamborini often refers to ‘morphogenesis’ but does not define it, and like most post-Haeckelian evolutionists ignores the easily observable dramatic, dynamic formative processes of embryogenesis which actually account for each and every morphology, despite passing reference to Wilhelm Roux and Hans Driesch in Chapter 1. The discoverer of the organizer, Hans Spemann, was probably the most famous German biologist in the 1920s and 1930s: neither are mentioned. As Gould and Lewontin point out in their 1979 manifesto, ‘*Developmental* constraints, a subcategory of phyletic restrictions, may hold the most powerful rein of all over possible evolutionary pathways’ (p. 160).

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Hannah Wills, Sadie Harrison, Erika Jones, Rebecca Martin and Farrah Lawrence-Mackey (eds.), *Women in the History of Science: A Sourcebook*

London: UCL Press, 2023. Pp. xxviii + 446. ISBN 978-1-8000-8415-5. £50.00 (hardback); £30.00 (paperback); £0.00 (open-access PDF).

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Five editors coordinated with nearly fifty other scholars to produce an ambitious sourcebook reflecting the diverse histories of women who pursued and produced natural knowledge from 1200 BCE to CE 2015. The range of entries is significant, not only chronologically but also geographically, with about a third reaching beyond Britain and Europe. The results offer an impressive, perhaps necessarily eclectic, set of brief primary-source readings, some translated into English. The editors’ intention is to interrupt what they note as linear and narrow views of science, opting to focus on a wide range of knowledge production in generally overlooked spaces. In particular, they emphasize the multiple ways in which women have contributed to science, both in areas common to scientific studies and in other areas of activity not readily identified as such. International scholars bring broad expertise to their individual entries and the general editors provide introductions to each of the twelve sections.

The individual entries are relatively short, with a few exceptions, but collectively they offer compelling and evocative examples for readers unlikely to be familiar with the myriad of subjects, chronologies and geographies. Each of the selections is a primary source with a brief introduction and documentation, typically with several footnotes. Because

this sourcebook is intended for potential classroom use, each entry offers additional commentary and study questions that reflect the issues raised by the reading, often related to the historical expertise of the contributor. Generous visuals help break up the text in this relatively long volume and add relevant information. In a few instances, the primary texts become the illustrations themselves: decorated Peruvian pottery, a sixteenth-century tapestry, a map of African explorations and a field photograph of archaeologists. Arranged roughly chronologically into twelve overlapping sections, the primary-source texts start with ancient ways of knowing and conclude with recent embodied experiences of women in science.

Some selections feature well-known figures from the history of science, providing new insights and data that would be useful in survey classes in the history of science. The first brief selection from Margaret Cavendish, for example, points to her scepticism of narrow empiricism based on new technologies like microscopes in the seventeenth century, while the second alerts us to her own fascination with more speculative possibilities in her book, *The Blazing World*. A century later, Caroline Herschel's memoir reveals the tension in negotiating opportunities to use her brother's observatory even as his demands limited her own creative possibilities. Other familiar scientists include the naturalist and illustrator Maria Sibylla Merian and the crystallographer and chemist Rosalind Franklin. Their inclusion demonstrates the ways in which a few intrepid women established a sometimes tenuous place integral to familiar intellectual streams in the history of science.

Some contributors engage with familiar topics, but with a revisionist perspective. Thus, for example, readers are encouraged to reconsider Circe in Homer's *Odyssey* by challenging long-established historical interpretations that treat the magic of other gods as power but define Circe's prowess as witchcraft. Other contributions introduce Arabic, Peruvian and even anonymous authors to demonstrate these women's pursuit of natural knowledge in times and places significant in global history. Although the majority of entries are shaped by Western chronology and topics, the editors also extend conventional historiographies through contributions that creatively use material and textual sources further afield.

Readers will find that this sourcebook is deliberate in its efforts to reflect how social, economic and cultural circumstances frame scientific access and practices. Given that the approach is biographical, a subtle but pervasive thesis is the engaged and occasionally assertive agency of the women revealed in these sources. Historical background is presented in a boxed graphic in each section. There readers see where, regardless of time and place, women engaged in independent investigations, contributed to empirical projects in field or laboratory, and even participated in elite institutions that rendered their efforts essentially invisible. Whether previously hidden or not, the women in this volume are presented in ways that make even known figures seem fresh. The result contributes to the ongoing process of rediscovery of women and does so in ways that reflect current historiography on women in science.

This eclectic and yet comprehensive collection offers multiple angles of vision on women's engagement with science, broadly defined. One of the longest entries is from a widely distributed book reprinted in several languages, *The Woman as Family Doctor* (1901), by Anna Fischer-Duchelmann (pp. 306–23). An excerpt from the nine-hundred-page health manual provides a startlingly candid discussion of female sexuality, complete with graphic illustrations of women's genitalia and of contraceptive methods.

The volume holds several such surprises, and even readers generally familiar with the literature on women in science will learn from these biographical essays. However, there are parameters in this near-encyclopedic book. With its focus on biography, the collection has little on the collaboration of women who found themselves segregated into subfields or who banded together against discriminatory practices. Because of its focus on women

pursuing natural knowledge in science, technology and medicine, no attention is paid to women in adjoining and essential occupations like teaching and library science. However, such topics are perhaps too much to ask of an already comprehensive volume.

The affordable paperback version allows an engaged reader to be able to dip in and out of the contributions or even to read it comfortably from cover to cover. Libraries may well invest in the hardbound volume in order to provide ongoing access for more intensive readership use, and faculty making occasional assignments may choose to take advantage of the open-access version. *Women in the History of Science* is a reader that offers a surprisingly comprehensive range of primary sources presented with additional resources that make them readily accessible for multiple readers at every level of education.

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Michelle DiMeo, *Lady Ranelagh: The Incomparable Life of Robert Boyle's Sister*

Chicago: University of Chicago Press, 2021. Pp. 296. ISBN 978-0-226-73160-5. \$45.00 (cloth).

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From her death in 1691 to the twentieth century, Katherine Jones, Lady Ranelagh, was largely forgotten. Now Michelle DiMeo has filled an important gap with this first book-length biography chronicling her remarkable life. DiMeo's book offers fascinatingly novel insights into one of the most important and influential female figures in seventeenth-century Britain and provides a fresh perspective on wider questions within the history of (women in) science. The book also makes significant methodological contributions, helping to advance research on other under-studied and sparsely documented women in science.

The book chapters proceed in chronological order, beginning with Ranelagh's early life. Chapter 1 provides useful context for understanding the intimate and mutually supportive relationship between Ranelagh and her brother Robert Boyle. In Chapter 2 we encounter Ranelagh as an agent whose work and influence were public rather than confined to the private sphere. It focuses on her active role in the Hartlib Circle, the correspondence network around Samuel Hartlib which discussed a wide range of matters around natural philosophy, religion and education. DiMeo also establishes the sociopolitical background of war- and revolution-ridden England and Ireland, revealing how Ranelagh built and used her network to exert political, religious and intellectual influence. The context established here is central to the analysis that follows.

Chapter 3 explores Ranelagh's work in natural philosophy and medicine. DiMeo reconstructs her influence on Boyle and the Hartlib Circle, examines the responsibility she assumed for her family's health, and studies her medical recipe trials and collections, tracing the exchange within her large and prestigious network. Chapter 4 investigates her time back in Ireland, focusing on the significant political influence she exerted through her international correspondence network and how she played a key and active role in