

JUDITH P. ZINSSER (ed.), *Men, Women, and the Birthing of Modern Science*. De Kalb, IL: Northern Illinois University Press, 2005. Pp. viii + 215. ISBN 0-87580-340-7. \$38.00 (hardback). doi:10.1017/S0007087407000441

It has been nearly a decade since the appearance of a major collection of scholarly essays dedicated specifically to women and ‘the birthing of modern science’. Lynette Hunter and Sarah Hutton’s *Women, Science and Medicine 1500–1700: Mothers and Sisters of the Royal Society* (Sutton, 1997) was a pioneering study that detailed the lives of several women on the fringes of developing all-male institutions. Many specialist articles on the subject have been published since then, but there has not been another collection dedicated exclusively to this topic until the present work. These two books display as many differences as similarities, but the long gap between them demonstrates the need for, and timeliness of, Judith P. Zinsser’s collection.

Men, Women, and the Birthing of Modern Science derives from an international conference co-sponsored by Miami University and the University of Cincinnati. The result boasts ten essays written by a diverse range of international scholars, each offering a unique slice of intellectual history as it developed across Europe from the sixteenth century to the eighteenth. After a brief introduction (which could have been stronger and more detailed), the essays are divided into three sections: ‘Women natural philosophers’, ‘Shifting language, shifting roles’ and ‘Women, men, and the new scientific establishment’.

The first section comprises three analyses of aristocratic women who experimented with various branches of science, the diversity in their lives being representative of the vast scope of this collection as a whole. Susanna Åkerman’s compelling essay details Queen Christina of Sweden’s experimentation with alchemy in the late seventeenth century and her hopes for personal transmutation into a man – adopting an Aristotelian view of bodily perfection. Hilda L. Smith analyses one of the now better-known female figures in early modern science, Margaret Cavendish, Duchess of Newcastle (1623–73). Smith traces Cavendish’s contradictory critiques of the microscope as evidenced in her printed texts and, more significantly, her few extant manuscript letters. An essay by Judith P. Zinsser examines how another well-remembered female natural philosopher, Emilie du Châtelet (1706–49), discussed with various learned men, and published on, branches of science traditionally deemed masculine, including mathematics, astronomy and metaphysics.

Section Two, ‘Shifting language, shifting roles’, opens with Margaret J. Osler analysing the gendered use of the words *natura* and *scientia* in the sixteenth and seventeenth centuries and offering a fresh look at key texts written by men who helped shape the course of the new experimental science, including Paracelsus and Francis Bacon. Osler’s essay is one of the most persuasive in this collection and presents an authoritative response to the often anachronistic theories of the so-called ‘scientific revolution’ previously delivered by eco-feminist critics, most notably Carolyn Merchant. This is followed by J. B. Shank discussing Bernard le Bovier de Fontenelle, and Franco Arato analysing Francesco Algarotti – essays which complement each other well by examining how the rhetorical devices employed in works such as Fontenelle’s *Entretiens sur la pluralité des mondes habités* (1686) popularized science and encouraged women’s engagement with the subject.

The four essays in the final section, ‘Women, men, and the new scientific establishment’, show how the work of female lay practitioners evolved after the rise of exclusive male-only scientific institutions throughout Europe. Lynette Hunter develops and complicates her arguments on sixteenth- and seventeenth-century Englishwomen’s domestic medicine originally introduced in her essays in *Women, Science and Medicine 1500–1700*. Stephen Clucas offers a fascinating case study of how a domestic medical recipe to dissolve kidney stones, developed by the female lay practitioner Joanna Stephens in the 1730s, was slowly appropriated by England’s Royal

College of Physicians – but only once they could virtually erase Stephens as the recipe’s originator. Monika Mommertz details how several generations of the Winkelmann-Kirch family continued to be employed in calendar production by Berlin’s Royal Academy of Sciences, as the work produced by the family proved too much for the academy’s newly appointed astronomer to reproduce alone. The section closes with Grigory A. Tishkin’s essay on Princess Ekaterine Romanovna Daskova’s (1743–1810) supervision of two scholarly academies in Russia. While an interesting essay, this feels slightly out of place here as much of the discussion focuses on late eighteenth- and early nineteenth-century Russia (a subject mentioned nowhere else in this collection) and the arguments are at times only tangentially linked to ‘science’ as it is understood in the other essays.

Each essay in *Men, Women, and the Birthing of Modern Science* offers an important contribution to our current understanding of women’s roles in seventeenth- and eighteenth-century science. Mommertz says that her essay ‘attempts to contrast [Londa] Schiebinger’s abrupt “turning point model” with a “phase model”’ (p. 161) – a thesis that applies not only to her essay, but to this collection as a whole. While the emergence of male-only scientific institutions in the late seventeenth century has traditionally been regarded as the ‘turning point’ when women became officially excluded from science, the collection offers many examples of women who continued their personal experimentations and became intellectually involved both formally and informally with members of the new scientific establishments. The models developed within individual essays do not always offer a uniform interpretation of how and why women were increasingly excluded from the new science, further denying a simplistic reading of this complicated subject; Hunter and Clucas, for example, paint pictures of women’s domestic medicine in late seventeenth-century England that subtly challenge each other.

The ‘Suggested readings’ list which concludes the book is far too brief and rudimentary to prove very useful, the only real weakness with this collection. A substantial bibliography highlighting key texts, particularly those written over the last decade, would have offered a more valuable guide to the state of current scholarship. Nonetheless this collection is very welcome, introducing suggestive new perspectives and helpfully complicating previous understandings of this transitional period in the history of science.

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IVOR GRATTAN-GUINNESS (ed.), *Landmark Writings in Western Mathematics 1640–1940*. Amsterdam, San Diego, Oxford and London: Elsevier B. V., 2005. Pp. xvii + 1022. ISBN 0-444-50871-6. £158.00 (hardback).
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It was not until the seventeenth century that doing mathematics became an identifiable profession, such that historians today can legitimately talk of ‘mathematicians’ as a community of experts producing mathematical works for one another in various institutional settings. This is the starting premise for Ivor Grattan-Guinness’s mammoth edited volume *Landmark Writings in Western Mathematics 1640–1940* – a book that takes the reader from René Descartes’s *La Géométrie* (1649) to David Hilbert’s and Paul Bernays’s *Grundlagen der Mathematik* (1934–9). Written by a *Who’s Who?* of authors in the history of mathematics, including Grattan-Guinness, Niccolò Guicciardini, June Barrow-Green, Jeremy Gray and Tony Crilly, to mention only a few, the book is composed of seventy-seven articles dealing with eighty-nine pieces of ‘writing’ spanning a wide range of mathematical topics.

Importantly, the book does not contain the original texts under discussion. It is not a compendium of primary sources. It is, rather, a compendium of succinct survey articles that provide