

# BOOK REVIEWS

## ■ General

**Mario Biagioli** (Editor). *The Science Studies Reader*. xviii + 590 pp., figs., apps., bibls., index. New York/London: Routledge, 1999. \$85 (cloth); \$35 (paper).

The appearance of a Routledge reader is a sign that a new field of study has caught the attention of the most trend-conscious academic publisher. *The Science Studies Reader*, edited by Mario Biagioli, has now joined those on cultural studies, postcolonial theory, gay and lesbian studies, and others on the Routledge list. These collections inevitably cross the boundaries of traditional disciplines, assembling texts that address the subject in question from a variety of methodological standpoints. In the introduction to his anthology Biagioli preaches the virtues of its heterogeneity, arguing that this reflects a rich diversity of strategies for scrutinizing the scientific enterprise powerfully entrenched at the heart of our culture.

The thirty-six chapters gathered here will unquestionably be welcomed by students and other readers who want a compact but fairly comprehensive survey of what has been done in science studies in the last two decades. The contributors include most of the leading lights of the field, including Collins, Daston, Galison, Hacking, Haraway, Keller, Latour, MacKenzie, Pickering, Rouse, Schaffer, Shapin, Traweek, and Turkle. In many cases the articles reprinted here are already identifiable as classic contributions, and there is no comparable anthology in which so many of them can be accessed so conveniently. The inclusion, for example, of Pierre Bourdieu's "The Specificity of the Scientific Field" makes it more readily available than hitherto. The provision of handy digests of important books by Robert Kohler and Lily Kay is also to be welcomed. While there is no comprehensive bibliography for the volume, selective reading lists are provided at the end. It is easy to predict a bright future for the collection as assigned reading for seminars in interdisciplinary science studies, and indeed I have already put it to use successfully in just that way.

As Biagioli admits, the coverage is more thorough in some areas than in others. There are ample discussions of the realism/constructivism de-

bate, the issues of gender and science, laboratory life, modern technology, and popularization. It is a pity, however, that seminal works of a slightly older vintage were excluded, such as those of Thomas S. Kuhn, Ludwik Fleck, and Michel Foucault. There are also some questionable choices of samples from certain writers. The chapters by Harry Collins, Joseph Rouse, and Theodore Porter, for instance, do not well represent the scope and significance of those authors' contributions to the field. Steven Shapin's "The House of Experiment in Seventeenth-Century England" has been shorn of its original illustrations. Historians will be certain to register some disappointment with the paucity of contributions dealing with periods before the nineteenth century. Shapin and Simon Schaffer are present individually, but their celebrated joint monograph is not represented, nor is the editor's own important work on Galileo.

The most substantial problem with the collection is its failure to give any account of the history of science studies itself. While some of the chapters are reprinted just as they were originally published (at dates from 1974 to 1998), others have been abridged for the volume and still others specially written. The chapters are assembled in alphabetical order according to the author's name. The effect is to make it impossible to follow the debates that have characterized the field or to recognize how one contributor's analysis responded to another's. Biagioli fails to supply the readers of his introduction with any explanation for the methodological diversity his anthology represents, and his arrangement of its contents deprives them of any possibility of reconstructing the history that lies behind it. Students will not be able to discern whether new approaches have arisen from productive debates, from cross-fertilization of different approaches, or simply from the search for ever-more-exotic theoretical novelties. In a collection that might have made a significant contribution to the field it represents, it is regrettable that this opportunity was missed.

JAN GOLINSKI

**Donald R. Kelley** (Editor). *History and the Disciplines: The Reclassification of Knowledge in Early Modern Europe*. viii + 344 pp., index.

Rochester, N.Y.: University of Rochester Press, 1997. \$79.95.

Reviewers for this journal are instructed to inform readers how the subject of the book under review “relates to the history of science.” The overall effect of this collection of essays on the formation and dissolution of learned disciplines in early modern Europe is to render that directive ambiguous. In English- and French-speaking countries the domain of the vernacular “science” has contracted to the natural sciences, but the contributors to this volume write under the device of the more ample “scientia.” Although there is a section of the volume devoted to “natural sciences,” essays devoted to philology, music, and anthropology in the section “Human Sciences” are of more than tangential relevance to the history of science in its narrow construal. Ann Moyer reminds us, for example, that music was once part of the quadrivium, along with arithmetic, geometry, and astronomy, and by early modern standards Vincenzo Galilei’s theories of sound production were not so remote from his son’s interests in mechanics. Peter N. Miller notes that the antiquarian and philological investigations of Nicolas-Claude Fabri de Peiresc were conducted in tandem with anatomical dissections and astronomical observations. Taken together, Moyer’s and Miller’s essays provide evidence of how what Jean d’Alembert once called the “mappemonde” of human knowledge has undergone a kind of continental drift in the past four centuries: once neighboring provinces, such as music and astronomy, slowly slide apart, while once distant regions, such as natural philosophy and mathematics, approach one another.

Some disciplines came into being, at least institutionally, during this period, like new islands emerging from the sea. In her essay “Francis Bacon and the Reform of Natural History in the Seventeenth Century,” Paula Findlen points out that the first botanical garden at an English university was founded in Oxford in 1620, trailing far behind similar establishments in Italy and the Low Countries. Bacon could, however, assume among his gentle Elizabethan readers a literary familiarity with natural history and an avid interest in the reports of Thomas Harriot, Sir Walter Raleigh, and other explorers of the exotic flora and fauna of the New World, as well as a vogue for naturalia in the form of gardens, cabinets of curiosities, and the decorative arts. Findlen argues that Bacon attempted to rechannel this aristocratic interest in natural history away from what he perceived to be the frivolous and trivial

pursuits of courtly culture and toward a more systematic and sober study of natural history as the basis of a reformed natural philosophy.

Londa Schiebinger’s essay “Gender in Early Modern Science” is not so much an account of history and scientific disciplines as a reflection on the causes and impact of, on the one hand, the exclusion of women from scientific careers, and, on the other, the gendering of scientific knowledge, particularly in the fields of anatomy and natural history. Although her account is retrospective, Schiebinger concludes with the claim that “a critical awareness of gender can produce new knowledge and new disciplinary configurations” (p. 330) in the contemporary world of science.

Essays by Anthony Grafton and Nicholas Jardine both deal with the role of the history of science in the formation of scientific disciplines. Grafton reconstructs the short-lived scholarly friendship between the astronomer Georg Joachim Rheticus and the physician, mathematician, and natural philosopher Girolamo Cardano, probably brought together by their shared interest in astrological history. Both believed that the secret to the cycles of world history lay in the stars; both were struck by the accuracy of horoscopes cast for, *inter alia*, Albrecht Dürer, Saverio, and Jesus Christ. If astronomy and astrology could reveal the hidden patterns of history, for Rheticus at least history could repay the favor by supplying lost empirical observations of stellar and planetary positions made in ancient times. History, in particular ancient Egyptian history, was the true repository of empirical astronomy. Jardine’s essay shows how Emil Du Bois-Reymond and Rudolf Virchow used the history of physiology and medicine, as well as the emblematic scientific careers of Goethe and Johannes Müller, to articulate and justify their own distinct visions of the discipline. The politically radical Virchow campaigned for a physiology based on pathology and tightly linked to clinical medicine; the more conservative Du Bois-Reymond turned his considerable rhetorical skills to the defense of an experimental physiology on a mechanistic model. For each, the history of science served to make their disciplinary ambitions vivid, desirable, and even inevitable. Jardine closes with a plea that historians of science and medicine overcome their disdain for disciplinary history as written by practitioners and instead examine it closely as both primary and secondary source.

LORRAINE DASTON